INSECTS OF MICRONESIA
Diptera: Sciaridae

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INTRODUCTION

There are few published records of Sciaridae from Micronesia. Bohart and Gressitt (1951) mention unidentified species placed in *Lycoria* Meigen and collected from heaps of cow manure and from a garbage dump on Guam. The specimens collected at the garbage dump are largely *Lobosciara spinipennis* (Sasakawa), plus some badly damaged females that are impossible to identify. I have not located the other collections mentioned in that publication. Hardy (1960) states that a series of females, which fit *Sciara* (*Lycoriella*) *garretti* Shaw [= *Bradysia tritici* (Coquillett)], was collected from Ocean Island. This family is, however, well represented in this region.

This study is based on specimens assembled at Bishop Museum (BISHOP) and includes loans from the California Academy of Sciences (CAS), Field Natural History Museum (FM), Museum of Comparative Zoology (MCZ), and the U. S. National Museum (US). The symbols in parentheses indicate the museums in which type specimens are deposited.

The United States Office of Naval Research, the Pacific Science Board (National Research Council), the National Science Foundation, and Bishop Museum have made this survey and publication of results possible. The final stages of this study were completed in conjunction with a study of the Sciaridae of the Hawaiian Islands supported by the National Science Foundation (GB-6761). Field research was aided by a contract between the Office of Naval Research, Department of the Navy, and the National Academy of Sciences, NR 160-175.

I wish to express my appreciation to Miss Suzanne Keenan and Mrs. Susan Burnett, who prepared the illustrations, and to Mrs. Dorothy Hoxie, who typed the manuscript.

MATERIALS AND METHODS

Approximately 1,600 slide-mounted adults and 1,500 alcohol specimens

from Micronesia were examined for this study. The largest collections are from Palau, Yap, Guam, Truk, Ponape, and Kusaie. Smaller collections were available from the Bonin Islands and Saipan, and from scattered atolls and smaller islands of the Marshall and Gilbert Islands. Most of the specimens were collected by sweeping, at light, and in Malaise traps. This is a fair sample of the fauna; however, judging from other areas sampled by collectors not specialists in this group, and subsequently studied by specialists, this is probably only a small portion of the actual sciarid fauna. For example, only 1 specimen of a wingless sciarid was collected, and 13 of the 22 species are represented by fewer than 6 specimens each. Also, 90% of the specimens examined represent 2 species—*Bradysia radicum* and *Lobosciara spinipennis*.

Various collecting methods should be used to obtain an adequate sample of the fauna. These include sweeping of various types of vegetation, extraction of adults from decomposing organic debris, light traps, Malaise traps, and various baits. The best methods for obtaining live material are the use of a black light on a white sheet, rearing adults from various types of decomposing organic matter (i.e., humus, rotting logs or twigs, and manure), and the use of baits. The latter method has great potential in that certain baits attract large numbers of gravid females. Tuomikoski (personal communication) mentioned that the best method for collecting wingless females (in Finland) was to place a 2-meter-square white cloth on the substrate to be sampled for a few hours. The females congregate on the undersurface of the sheet. Hackman (1963) described several techniques used in collecting the dipterous fauna (including a large number of sciarid species) from burrows of voles (*Microtus*, *Clethrionomys*) utilizing bait and funnel traps. The most effective bait for sciarids was decaying fungus, a myxomycete.

The identification of many species, and especially description of new taxa, require well prepared slide-mounted material. The male terminalia should not be flattened since this frequently distorts important characteristics. The entire specimen can be mounted as described in Steffan (1966). Also, Tuomikoski (personal communication) highly recommends that some specimens should be studied in glycerine (after being cleared in KOH).

Sciarids, because of unusual chromosome behavior in spermatogenesis and during the early cleavage stages of the embryo and the large salivary gland chromosomes, provide excellent material for evolutionary studies. Many species are very easy to rear and have short life cycles. Rearing methods are summarized in Steffan (1966).

Drawings were made with the aid of a Wild drawing tube attached to a Wild M-20 research microscope. Most measurements were made with a 10X

measuring eyepiece on a Wild M-20. For wing measurements of larger specimens, a 10X measuring eyepiece on a Wild M-5 dissecting microscope was used.

DESCRIPTIVE METHODS

The terminology is essentially as in Steffan (1966), except for the differences discussed below. The R-M (radial-medial) index and the C-M (costal-medial) index were proposed by Steffan (1968). The R-M index is the distance from a point distad to Rs to the base of the medial fork divided by the length of R_1 from a point distad of Rs to the apex of R_1. The C-M index is the distal length of the costa from the apex of R_5 divided by the distance from the apex of R_5 to the apex of M_1. The latter measurement is made in 2 parts—from the apex of R_5 to the apex of the costa and from the apex of the costa to the apex of M_1.

The term "flagellomere" is used in place of "flagellar segment." Measurements of the length of the flagellomere include only the enlarged portion and exclude the anterior stem (neck). Also, the term "joint" refers only to the flagellomere proper.

The abundance and length of the interfacetal hairs of the compound eyes frequently have been used as key taxonomic characters—usually expressed as either bare or haired. Actually, the "bare eyes" usually have short hairs between some of the facets. The "haired eyes" have longer hairs (extending well beyond the outer curvature of the facets and found between most of the facets). The labellum is considered well developed if it has pronounced labellar lobes and distinct labellar sclerites.

Leg ratios are comparisons of the lengths of the femur, tibia, basitarsus, and second tarsal segment, respectively. These ratios are given in micrometer units. The setal pattern of the fore tibia (up to but excluding the preapical comb) is referred to as either undifferentiated (fig. 1, *a*) or with enlarged setae (fig. 1, *b*).

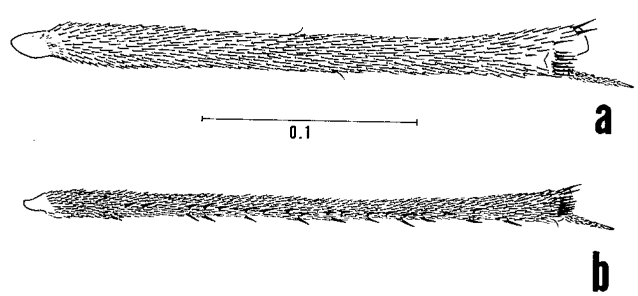


FIGURE 1. Dorsal surface of fore tibia. **a,** *Bradysia boninensis;* **b,** *Phytosciara brachygaster.*

BIOLOGY

Immature stages apparently were not collected in the various surveys of this region. In other areas, larvae usually feed on fungus (mycetophagous), animal excrement (coprophagous), and decaying plant material (phytosaprophagous). The larvae of many species breed in rotten wood or under the bark of fallen trees (Tuomikoski, 1957). Most of these larvae were found in wood being decomposed by red rot. In Hawaii, I have found several species, including *Ctenosciara hawaiiensis* (Hardy), which breed in rotting branches of various trees. Some species damage the roots of young seedlings and are minor pests in greenhouses. They can also be serious pests in mushroom houses.

The life cycle of many species of *Bradysia* ranges from 16 to 35 days. Eggs usually hatch within 4 to 7 days. The 4 larval instars take from 8 to 20 days. The pupal stage lasts from 3 to 5 days. Judging from preliminary studies of Hawaiian species, some of the species living in rotting wood have a much longer life cycle.

The eggs are usually yellowish when first deposited, turning white as the embryo matures. The larva (fig. 2) is characterized by the shining, black head capsule and the usually featureless, 12-segmented, white, translucent body. The pupa is the obtect adecticous type.

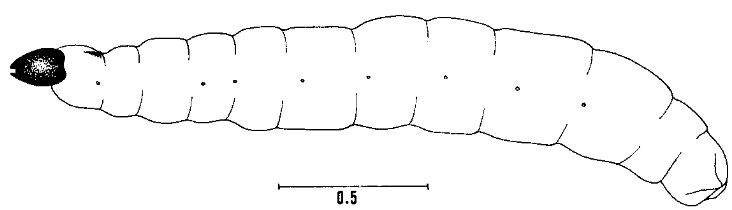


FIGURE 2. *Bradysia impatiens* (Johannsen). Larva.

SYSTEMATICS

Sciaridae in general have been considered the "problem children" of the Diptera. Until Frey (1942, 1948) and Tuomikoski (1960) made their outstanding contributions to sciarid taxonomy, these small and, to the casual observer, nondescript flies were almost impossible to identify. An interesting comment on the reputation of these flies is told by Frey (1942, p. 6) when he mentioned that Professor Carl Lundstrom, the Finnish specialist on the Nematocera, wrote "Tufri frin detta" (God preserve us!) on the title page of his copy of Winnertz's monograph on Sciaridae (1867). I imagine this comment has been shared by many other entomologists who have attempted to identify these flies.

Tuomikoski's revision of the Finnish Sciaridae (1960) is really the first sound taxonomic work on both the generic and specific level. His generic concepts have been followed largely in this study, although some seem a bit extreme. Tuomikoski's generic concepts are based primarily on Finnish species, whereas a generic revision of the Sciaridae of the world is needed. With the availability of more sophisticated taxonomic methods, it should be possible to obtain a better understanding of the higher classification of these flies.

This family has been studied in adjacent areas to some extent: in New Zealand by Tonnoir and Edwards; in Australia by Skuse; in the Malayan and Oriental areas by Edwards and others, and in the Hawaiian Islands by Hardy. The rich fauna of the Papuan subregion is practically unknown, as is also true of the Philippine and Japanese fauna. Hardy (1960) presented the most comprehensive faunal study of any Pacific area, employing the more important structural features. Most other workers placed too much emphasis on color and wing venation, and their work needs to be revised before most of their species can be identified.

The male terminalia, shape of the flagellomeres, ornamentation of the fore tibia, structure and setal pattern of the maxillary palpus, and some features of the wing are important in defining species and genera. These have all been used by Tuomikoski. The females are usually difficult to identify; however, the structure of the vaginal furca is important in identification of certain species or species complexes and may be useful in higher classification.

ZOOGEOGRAPHY

The distribution of Micronesian Sciaridae is summarized in Table 1. Most species are found on the high islands of the Caroline chain (16 of 22 species, or 72%) with the majority of these from the Palau Islands (10 species). The next-richest sciarid fauna is on Ponape (9 species). Many of the gaps in the distribution of some species must be partially accidental, and more thorough surveys should yield additional records and certainly additional species.

Since sciarids breed in a wide variety of decaying organic matter, they are easily transported by man. Five Micronesian species were probably introduced by man—*Bradysia radicum*, *B. tritici*, *Plastosciara latipons*, *Corynoptera latistylata*, and *Lobosciara spinipennis*—and others may also have been. The first four species are also found in Hawaii. Holzapfel and Harrell (1968), in a summary of insects collected in the ship trapping program of Bishop Museum between 1957 and 1966, mentioned that 52 specimens of Sciaridae were collected in nets suspended above ships at sea. This is a very small percentage of the more-than 13,000 specimens collected during this period, and some of

Table 1. Distributional List of Micronesian Sciaridae

	Micronesian Island Groups											Other Localities
				Caroline								
	Bonin	N. Mariana	S. Mariana	Palau	Yap	Truk	Ponape	Kusaie	Marshall	Gilbert	Ocean	
1. Pseudozygoneura* musicola*				×		×	×					
2. Scythropochroa gressitti*			×			×						
3. S. quadrispinosa*				×								
4. S. trispinosa*									×			
5. Epidapus species A				×								
6. Plastosciara jaluitensis*									×			
7. P. latipons				×	×				×			Hawaii
8. P. yapensis*					×							
9. Corynoptera brevipalpis*				×								
10. C. heterochela*				×			×					
11. C. latistylata			×						×			Hawaii
12. C. ponapensis*							×					
13. C. sabroskyi*				×								
14. C. sylviae*				×			×					
15. Phytosciara brachygaster*				×			×					
16. Ctenosciara multispinosa*							×					
17. Bradysia boninensis*	×											
18. B. kraussi*			×									
19. B. radicum			×	×	×	×	×	×	×	×		India, Samoa, Marquesas, Fiji, Hawaii; ? England
20. B. snyderi*	×											
21. B. tritici			×				×	×	×			North America, Central and South America, Hawaii; ? Europe
22. Lobosciara* spinipennis		×	×	×		×	×	×	×			Thailand

*Described as new.

these may have come from the ship; however, the possibility of dispersal by air currents cannot be ruled out. Certainly, short-range dispersal by air currents is possible. More critical examination of available data and additional studies of air dispersal of insects using more sophisticated methods are essential before this method of dispersal can be properly evaluated.

Dispersal of sciarids in logs carried by ocean currents is also a possibility. Several species of Micronesian sciarids probably breed in rotting logs or in gallaries of beetles or termites.

The apparently high degree of endemism (17 of 22 species, or 77%) is misleading. Some of the species described as new will undoubtedly be found elsewhere when the fauna in adjacent areas is thoroughly studied. Most of the species belong to genera found elsewhere; of the nine genera found in Micronesia, only *Pseudozygoneura* is restricted to this area, and its disjunct distribution—Palau, Truk, and Ponape—indicates that it also may be found elsewhere. Most of the fauna is probably derived from the Oriental Region, some possibly from the Papuan Subregion. Since the fauna in adjacent areas has not been studied adequately, a detailed zoogeographical analysis of the sciarid fauna of Micronesia is impossible.

Key to Genera of Sciaridae in Micronesia

1. Stem (neck) of flagellomere 4 short, never more than 1/2 as long as flagellomere; flagellar hairs less than 1.5 × as long as diameter of flagellomeres........................3
   Stem (neck) of flagellomere 4 long, subequal to or slightly longer than flagellomere; distal flagellar hairs more than 2 × as long as diameter of flagellomeres.................2
2. Fork of medial vein distinctly asymmetrical, M_1 strongly arcuate basally; distimere acuminate, with strong apical spine and some strong subapicals.........**Zygoneura***
   Fork of medial vein symmetrical or M_1 only slightly bowed basally; distimere blunt, with some strong mesal spines..**Pseudozygoneura**
3. Fore tibia with preapical, ventral comb consisting of 1 transverse row of subequal setae...8
   Fore tibia undifferentiated preapically or with various preapical ventral setal arrangements (if preapical setae nearly 1-rowed, then 1st segment of maxillary palpus with 1 seta only)..4
4. Maxillary palpus 1-segmented..5
   Maxillary palpus 2- or 3-segmented...6
5. $Radius_1$ ends opposite or slightly distad of base of medial fork (R-M index 1.0 or less); ♀♀ with well developed wings; hind tibial spurs slightly longer than diameter of tibial apex; apex of fore tibia with triangular, preapical ventral patch of slightly enlarged setae ....**Scythropochroa**
   $Radius_1$ ends considerably proximad of base of medial fork (R-M index usually greater than 1.5); ♀♀ wingless; hind tibial spurs subequal to or shorter than diameter of tibial apex; preapical ventral setae of fore tibia undifferentiated............**Epidapus**
6. $Radius_1$ ends distinctly proximad of base of medial fork (R-M index greater than 1.3); C-M index 0.6 or more; haltere with 1 row of dorsal setae; tarsal claws usually simple, occasionally with small teeth..7
   $Radius_1$ ends opposite or slightly proximad of base of medial fork (R-M index 1.0 or less); C-M index about 0.5; haltere with 2 or more rows of dorsal setae, tarsal claws with large subbasal teeth ....**Phorodonta***

*These genera are not known from Micronesia but are included to make the key more useful.

7. Flagellomere 4 short, as long as wide or shorter (longer in *P. yapensis*); maxillary palpus usually 2-segmented .... **Plastosciara**
   Flagellomere 4 always longer than wide; maxillary palpus 3-segmented... **Corynoptera**
8. Posterior wing veins (at least M_1 and M_2) with macrotrichia 9
   Posterior wing veins bare 10
9. Tarsal claws coarsely toothed; fore tibial comb more-or-less contiguous with tibial vestiture; C-M index usually 0.4–0.5; distimere blunt apically, without apical spines .... **Phytosciara**
   Tarsal claws without coarse tooth or with only 1 broad submedian tooth; fore tibial comb separated proximally from tibial vestiture by bare area; C-M index 0.6 or more; distimere with 1 or more apical spines .... **Ctenosciara**
10. Mid and hind tibia with 2 subequal spurs 11
    Hind tibia with 1 spur, mid tibia usually with 1 spur; if 2, then 2nd is distinctly shorter .... **Scatopsciara***
11. Clypeus bare or with 1 or 2 median setae; genital rod elongate and with broad apical fork; basimere ventrally usually simple, occasionally with single lobe or median patch of hairs; tergum X bilobed, each lobe simple .... **Bradysia**
    Clypeus with 4 or more setae; genital rod elongate and whip-like with apical portion hooked; basimere ventrally with 2 or more setigerous lobes; each lobe of tergum X split .... **Lobosciara**

Genus **Pseudozygoneura** Steffan, new genus

Type of genus: *Pseudozygoneura musicola* Steffan, n. sp.

MALE. *Head:* Interfacetal hairs sparse and short; eye bridge 2 to 4 facets wide. Flagellomere 4 slightly longer than wide, distal flagellar hairs at least 2 × as long as diameter of flagellomeres; flagellar necks very long, as long as or longer than enlarged portion of flagellomere. Palpus 2-segmented; segment 1 with 3 to 5 dorsal setae and numerous dorsal basiconic sensillae, segment 2 ovoid, slightly shorter than 1. Clypeus bare. Labellum well developed.

Thorax: Mesonotum with acrosticals weakly developed, dorsocentrals well developed. Posterior pronotum with setae. Posterior mesoepimeron normal.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg 0.6 × length of fore femur. Fore tibia without enlarged median setae and with dense patch of enlarged setae apically. Hind tibia with some enlarged posterodorsal and ventral setae; spurs distinctly longer than diameter of tibial apex. Tarsal claws swollen submedially.

Wing: R-M index 2.0–3.0, C-M index 0.6–0.8. Costa, R_1, R_5 and distal portion of r-m with macrotrichia; posterior veins bare; r-m 0.7–1.0 × length of bM (base of Media); Cu (cubitus) 0.2–0.7 × length of bM. Median fork symmetrical. Haltere with 1 dorsal row of setae.

Abdomen: Abdominal setae strong; sternum VIII with 2 to 3 rows of posterior setae. Tergum X bilobed. Basimeres broadly joined ventrally without differentiated setal groups. Genital rod short, fork inflated distally. Distimere elongate, ovoid, concave mesally with apical spurs.

The distinctive features of this genus are the elongate neck of the male flagellomeres, the very long distal setae of the flagellomeres, and the normal medial fork. It resembles *Zygoneura* in the structure of the male flagellomeres; however, it differs from this taxon in the form of the medial fork—in *Zygoneura*, M_1 is strongly bowed basally and in *Pseudozygoneura*, the medial fork is normal,

only slightly bowed basally. Also, the male terminalia differ in the species I have seen—in *Zygoneura*, the mesodorsal surface of the distimere frequently has some distinct spines, while in *Pseudozygoneura*, the setae in this area are undifferentiated.

The relationship of this taxon to *Zygoneura* is uncertain. The similar structure of the flagellomeres of the male antennae may be due to convergent evolution. Females of *Zygoneura* have normal flagellomeres and, likewise, the female of this taxon presumably could have normal flagellomeres.

1. **Pseudozygoneura musicola** Steffan, n. sp. (fig. 3, *a-f*)

MALE. *Head:* Interfacetal hairs sparse and short, barely extending beyond outer curvature of facets; eye bridge 2 facets wide at junction, next vertical row 4 facets, and 3rd vertical row 5 facets, most of eye bridge 4 to 5 facets wide. Median ocellar bristles (3) well developed. Antenna: scape slightly wider than pedicel with 3 or 4 moderate median setae; pedicel with median transverse row of moderate setae; flagellomere 4 (fig. 3, *c*) slightly longer than wide, distal margin almost 2 × as wide as proximal margin; neck elongate, as long as or slightly longer than flagellomere; distal flagellar hairs at least 2 × as long as diameter of flagellomeres, proximal flagellar hairs about 1/2 as long, hyaline sensillae numerous; apical flagellomeres with distal margin subequal to proximal, hairs subequal. Prefrons with 2 to 7 median ventral setae; clypeus bare. Labellum well developed. Palpus 2-segmented (fig. 3, *b*); segment 1 swollen apically with 2 to 5 dorsolateral setae and numerous dorsal and anterior basiconic sensillae; segment 2 ovoid, slightly shorter than 1 with 8 setae.

Thorax: Acrostichals weakly developed, restricted to anterior 1/4; dorsocentrals well developed, in 2 rows; supraalars well developed. Scutellum with 4 strong posterior and 7 to 9 weaker lateral setae. Posterior pronotum with 3 short anterior setae; anterior pronotum with 3 or 4 strong posterior ventral setae; proepisternum with 5 strong median setae. Proepimeron well developed; posterior mesoepimeron normal, about 2 × longer than wide. Metanotal apodeme short and inflated distally.

Legs: Fore-leg ratio (10×) 26:36:16:6 (range of femoral length 26–30), hind-leg ratio 36:48:19:6 (range of femoral length 36–41). Fore and mid tibiae without distinctly enlarged setae; fore tibial comb (fig. 3, *d*) composed of a dense ovoid patch of enlarged setae set in a shallow pit. Hind tibia with short scattered, distinctly enlarged posterodorsal setae along distal 1/3 and enlarged ventral setae on distal 1/4; apex with 6 enlarged setae; spurs about 1.4 × longer than diameter of tibial apex. Tarsal claws with submedial swelling.

Wing: (fig. 3, *a*); length 2.0 mm (range 1.9–2.3 mm), width 0.7 mm (range 0.7–0.8 mm). R-M index 3.1 (range 2.3–3.1), C-M index 0.6 (range 0.6–0.8). Costa, R_1, R_5, and distal portion of r-m with macrotrichia; r-m 0.7 × length of bM (range 0.7–1.0), Cu 0.6 × length of bM (range 0.2–0.7). M and basal portions of M_1 and M_2 evanescent. Haltere with 1 dorsal row of setae.

Abdomen: Tergal and sternal setae strong; sternum VIII with 2 or 3 rows of posterior setae. Terminalia as in fig. 3, *e*; tergum IX broad (fig. 3, *f*); tergum X bilobed. Basimeres broadly joined ventrally, without differentiated setal groups, mesoapical setae short. Dorsal apodeme well developed, broad, extending to anterior margin of genital cavity. Genital rod short, fork inflated distally. Tegmen as in fig. 3, *e*. Distimere elongate, ovoid, concave mesally, with 1 stout apical and 2 preapical (mesoapical) spines.

FEMALE. Unknown.

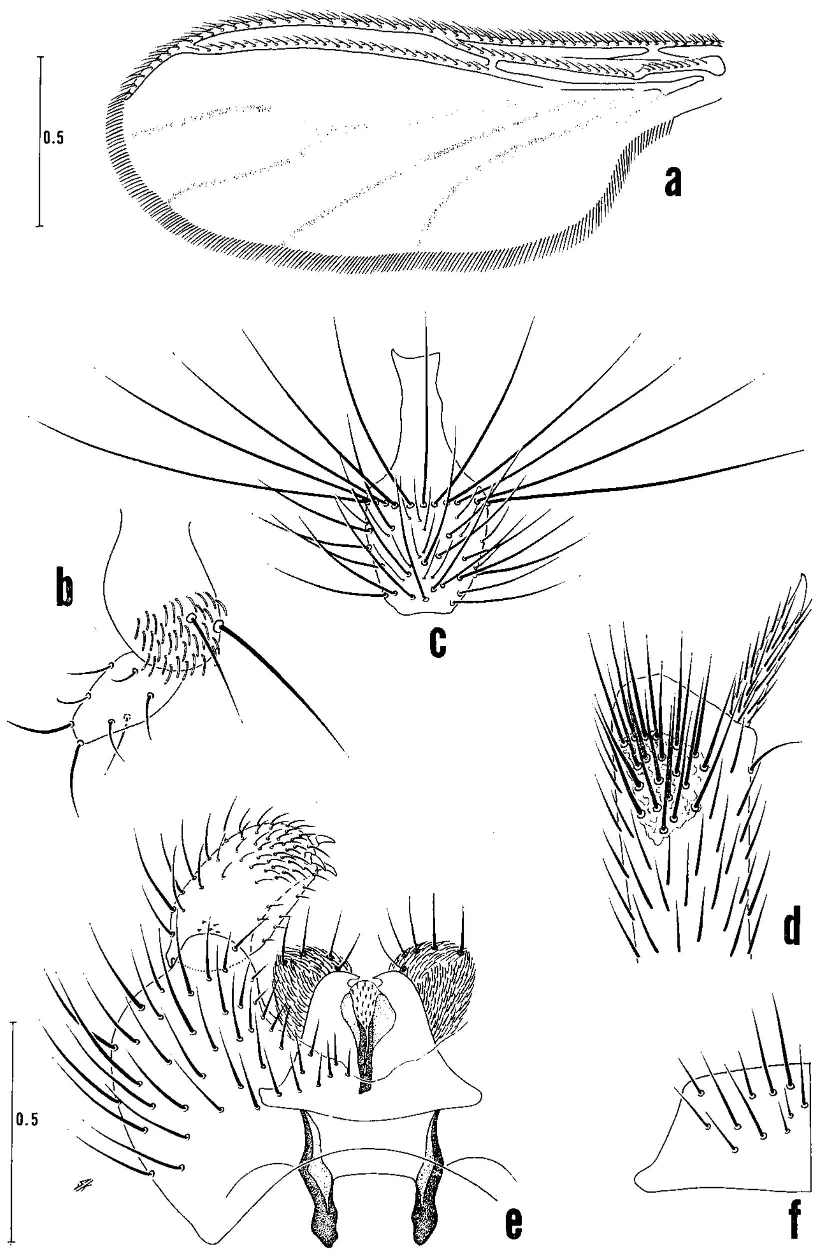


Figure 3. *Pseudozygoneura musicola.* Male: **a,** wing; **b,** maxillary palpus; **c,** flagellomere 4; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX.

Holotype, ♂ (US 70555), Ulimang, Babelthuap I., Palau Is., Dec. 15, 1947, extracted from dead banana leaves, Dybas. Paratypes (Bishop, US): ♂, Airai, Ngarsung, Babelthuap I., Palau Is., May 16, 1957, Sabrosky; ♂, Koror I., Palau Is., Jul. 26, 1956, McDaniel; ♂, Unibot Mt., Ton I., (Tol), Truk, Jan. 1, 1953, light trap, 32 m, Gressitt; ♂, Temwetemwensekir Mt. (Tamatamansakir), Ponape I., Jan. 19, 1953, Gressitt.

MATERIAL EXAMINED: 4 ♂♂ on slides, 1 ♂ in alcohol.

DISTRIBUTION: Caroline Is. (Palau, Truk and Ponape).

This species is probably more widespread than indicated by the scattered records above. The female may be difficult to associate with the male since, in *Zygoneura*, the females have normal flagellomeres.

Genus **Scythropochroa** Enderlein

Scythropochroa Enderlein, 1911, Arch. f. Naturg. **77:** 138 (Type species: *S. latefurcata* Enderlein, by original designation). —Edwards, 1928, Insects of Samoa, Brit. Mus. (Nat. Hist.) **6:** 15; 1928, J. Fed. Malay States Mus. **14:** 11. —Frey, 1942, Notul. Ent. **22:** 40; 1948, Notul. Ent. **27:** 46. —Tuomikoski, 1957, Ann. Ent. Fenn. **23:** 5; 1960, Ann. Zool. Soc. 'Vanamo **21:** 30.

MALE. *Head:* Interfacetal hairs short and sparse. Eye bridge 3 to 5 facets wide (in Micronesian species). Flagellomere 4 about 2.0–2.5 × longer than wide; flagellar hairs shorter than diameter of flagellomeres; flagellar neck short (usually 0.1 to 0.2 × length of joint), but distinct. Palpus 1-segmented; globular with 3 or more setae and numerous basiconic sensillae; palpifer in some species with ventral setae. Clypeus bare. Labellum weakly developed.

Thorax: Acrostichals moderately to well developed; dorsocentrals well developed. Posterior pronotum bare or with setae. Posterior mesoepimeron broad, slightly wider than long.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg about 0.7 × length of fore femur. Fore tibia without enlarged median setae, fore tibial comb composed of a patch of dense enlarged setae. Hind tibial spurs slightly longer than diameter of tibial apex. Tarsal claws simple or with only 1 stout submedian tooth.

Wing: R-M index usually less than 1.0; C-M index 0.6-0.8. Costa, R_1, R_5, and usually r-m with macrotrichia; posterior veins bare. Medial fork symmetrical. Haltere with 2 or more rows of dorsal setae.

Abdomen: Abdominal setae generally strong; sternum VIII with 2 or 3 rows of posterior setae. Tergum X bilobed. Distimere with group of inwardly directed spines. Genital rod long with broad apical fork.

FEMALE. Similar to ♂. Stem of vaginal furca elongate, arms arising near middle.

This genus apparently is widespread in the Oriental region extending into the Pacific area (Samoa, Fiji, New Zealand, and Micronesia) and is also found in the Palaearctic region (Albania and Finland). Tuomikoski (1957) found 2 species whose larvae bred in wood decomposed by red rot. The larvae usually live in small colonies. He frequently found the adults resting on rotting wood.

Many of the Oriental species have been described from females only, and those descriptions are usually inadequate. Some of the following species, therefore, may have been described already. The males of *S. quadrispinosa* and *trispina* differ from those of *S. velata* Enderlein (as described by Edwards, 1928) in the armature of the distimere. In *velata*, the stout spines are closely grouped together at the apex, while in both *quadrispinosa* and *trispina*, they are farther apart.

KEY TO SPECIES OF *Scythropochroa* IN MICRONESIA

1. Segment 1 of maxillary palpus with 4 or more setae; acrostichals usually well developed to scutellum 2
   Segment 1 of maxillary palpus with 3 setae; acrostichals developed only on anterior 1/3; dististyle subglobular, with 4 strong mesal spines .... **3. quadrispinosa**
2. Stem of Cu distinctly longer than base of medial vein (bM); palpifer without ventral setae; distimere with 3 stout mesoapical spines .... **4. trispinosa**
   Stem of Cu shorter than base of medial vein (bM); palpifer with 1 or 2 ventral setae (♂ unknown) .... **2. gressitti**

2. **Scythropochroa gressitti** Steffan, n. sp. (fig. 4, *a-f*)

FEMALE. *Head:* Interfacetal hairs sparse, short, barely extending beyond outer curvature of facets; eye bridge 4 to 5 facets wide, rows irregular. Median ocellar bristles strong. Antenna: scape slightly narrower than pedicel, with 1 to 3 median setae; pedicel with weaker preapical setae; flagellomere 4 (fig. 4, *b*) about 1.7 × longer than wide, neck very short (0.1 or less); flagellar hairs shorter than diameter of joints; hyaline sensillae long and abundant. Prefrons with ventral patch of 18–20 strong setae. Clypeus bare. Labellum weakly developed. Palpus (fig. 4, *c*) 1-segmented, egg-shaped, with numerous dorsal basiconic sensillae and 6 to 10 ventral setae and palpifer with 12 ventral setae.

Thorax: Acrostichals well developed, dorsocentrals very strong. Scutellum with 4 strong posterior setae and several weaker lateral setae. Postnotum with 2 or more well developed median setae. Posterior pronotum bare, anterior pronotum with 7 posterior setae. Proepisternum with 5 to 7 strong median setae. Posterior mesoepimeron broad, about 1.6 × longer than wide. Metanotal apodeme short.

Legs: Fore-leg ratio 35:40:32:11, hind-leg ratio 50:67:32:11. Fore and mid tibia without enlarged setae; fore tibial comb (fig. 4, *d*) composed of a dense ovoid patch of setae set in a shallow pit. Hind tibiae with enlarged posterodorsal setae along distal 1/3; apex with 5 enlarged setae, spurs about 1.7 × longer than diameter of tibial apex. Tarsal claws with 1 stout submedian tooth.

Wing: (fig. 4, *a*); length 3.3–3.5 mm, width 1.1–1.2 mm. R-M index 0.8, C-M index 0.7–0.8. Costa, R_1, R_5, and r-m with macrotrichia, other veins bare; r-m 0.9 × length of bM; Cu 0.5–0.6 × length of bM. Median and medial fork evanescent. Haltere with 2 rows of dorsal setae.

Abdomen: Tergal and sternal setae well developed. Vaginal furca (fig. 4, *e*) stout with arms arising near middle of stem. Cercus (fig. 4, *f*) normal.

MALE. Unknown.

Holotype, ♀ (BISHOP 8221), Unibot Mt., Ton I. (Tol), Truk, 390 m, Jan. 2, 1953, Gressitt. Paratypes (US, BISHOP), ♀, same data; ♀, Pt. Oca, Guam, Jun. 29, 1945, light trap, Bohart and Gressitt.

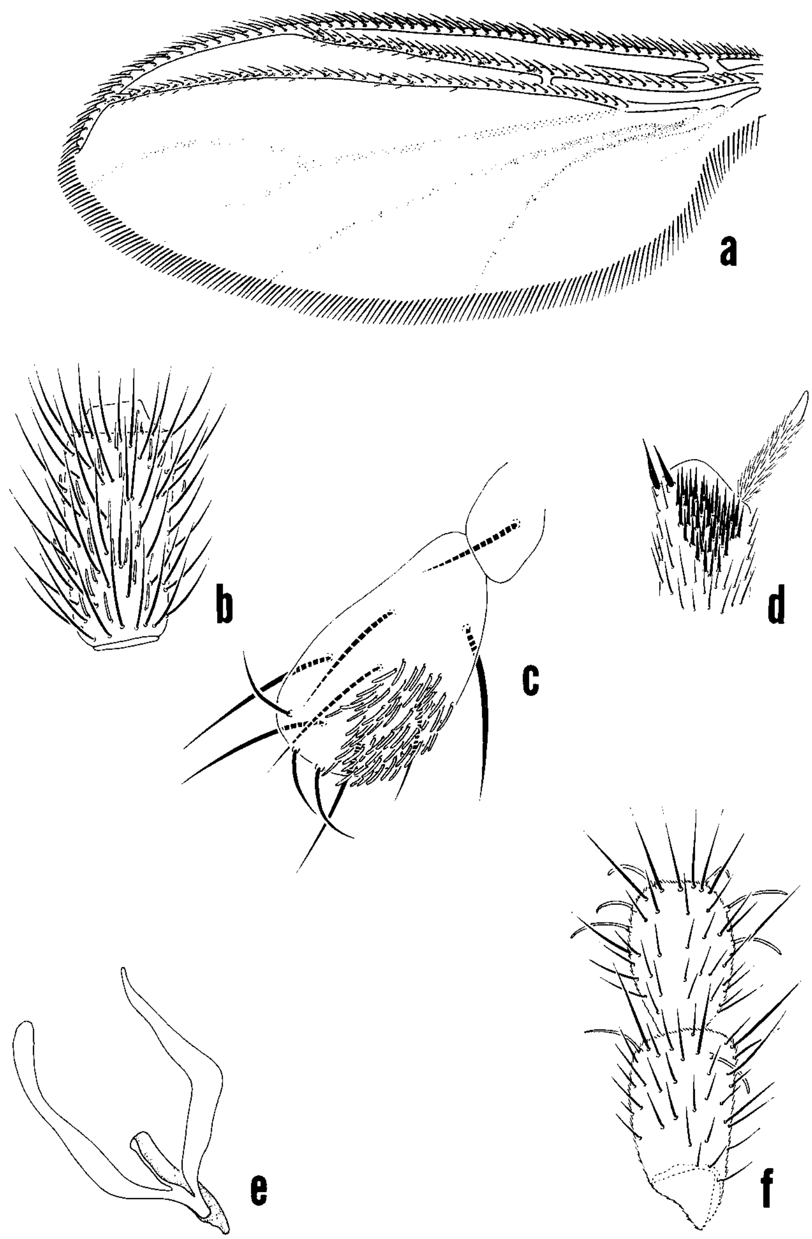


FIGURE 4. *Scythropochroa gressitti*. Female: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** vaginal furca; **f,** cercus, lateral view.

MATERIAL EXAMINED: 3 ♀♀ on slides.

DISTRIBUTION: Caroline Is. (Truk) and S. Mariana Is. (Guam).

3. **Scythropochroa quadrispinosa** Steffan, n. sp. (fig. 5, *a-e*)

MALE. *Head:* Interfacetal hairs sparse, short, barely extending beyond outer curvature of facets; eye bridge 5 to 6 facets wide at junction, rows irregular. Median ocellar bristles (2) well developed. Antenna: scape slightly narrower than pedicel, with 4 subapical setae, 1 of which is strong; pedicel with scattered weaker setae on distal 1/2; flagellomere 4 (fig. 5, *a*) about 2.2 × longer than wide, neck short (0.20); flagellar hairs slightly shorter than diameter of flagellomeres. Prefrons with median patch of 17–19 strong setae. Clypeus bare. Labellum weakly developed. Palpus (fig. 5, *c*) 1-segmented, globular, with 3 ventrolateral setae and numerous basiconic sensillae.

Thorax: Acrostichals moderately developed to anterior 1/4; dorsocentrals well developed. Scutellum (damaged, setal number and size cannot be determined). Postnotum with patch of moderately developed median setae; posterior pronotum bare; anterior pronotum with 5 strong posterior setae. Proepisternum with 12 strong median setae. Proepimeron well developed; posterior mesoepimeron broad, slightly wider than long. Metanotal apodeme small and narrow.

Legs: Fore-leg ratio 26:32:18:8, hind-leg ratio 37:48:21:8. Fore and mid tibiae without enlarged setae; fore tibial comb (fig. 5, *b*) composed of large patch of elongate and slightly enlarged setae set in a shallow pit. Hind tibia with slightly enlarged posterodorsal setae along distal 1/2; apex with 6 enlarged setae; spurs about 1.3 × longer than diameter of tibial apex. Tarsal claws with submedian swelling.

Wing: (damaged on holotype and missing on paratype). R-M index probably less than 1.0; Cu 0.8 × length of bM; medial and cubital veins bare. Haltere with 2 rows of setae.

Abdomen: Tergal and sternal setae well developed. Sternum VIII with 2 or 3 rows of posterior setae roughly arranged in 2 lateral patches. Terminalia as in fig. 5, *d*. Posterior margin of tergum IX obtuse (fig. 5, *e*); tergum X bilobed. Basimeres relatively broadly joined ventrally, with large medioventral lobe on each side of midventral line, each lobe covered with moderately long setae; mesoapical setae moderately developed. Dorsal apodeme well developed, extending about 2/3 into genital cavity. Genital rod long and narrow, apex broadly forked, U-shaped; tegmen as in fig. 5, *d*. Distimere subglobular with 4 strong mesal spurs along distal 1/2.

FEMALE. Unknown.

Holotype, ♂ (US 70556), Ngiwal, Babelthuap I., Palau Is., May 21, 1957, Sabrosky; paratype (BISHOP), ♂, same data except May 19, 1957.

MATERIAL EXAMINED: 2 ♂♂.

DISTRIBUTION: Caroline Is. (Palau).

4. **Scythropochroa trispinosa** Steffan, n. sp. (fig. 6, *a-f*)

MALE. *Head:* Interfacetal hairs sparse, barely extending beyond outer curvature of facets; eye bridge about 3 facets wide (distorted in holotype). Median ocellar bristles (3) well developed. Antenna: scape slightly narrower than pedicel, with 4 strong anterior setae; pedicel with scattered weaker setae on distal 1/2; flagellomeres missing in holotype. Prefrons with median patch of 16 strong setae. Clypeus bare. Labellum weakly developed. Palpus (fig. 6, *b*) 1-segmented, ovoid, with numerous sensillae set in a shallow sensory pit and with 4 to 6 ventral setae.

Thorax: Acrostichals and dorsocentrals well developed. Scutellum with numerous very

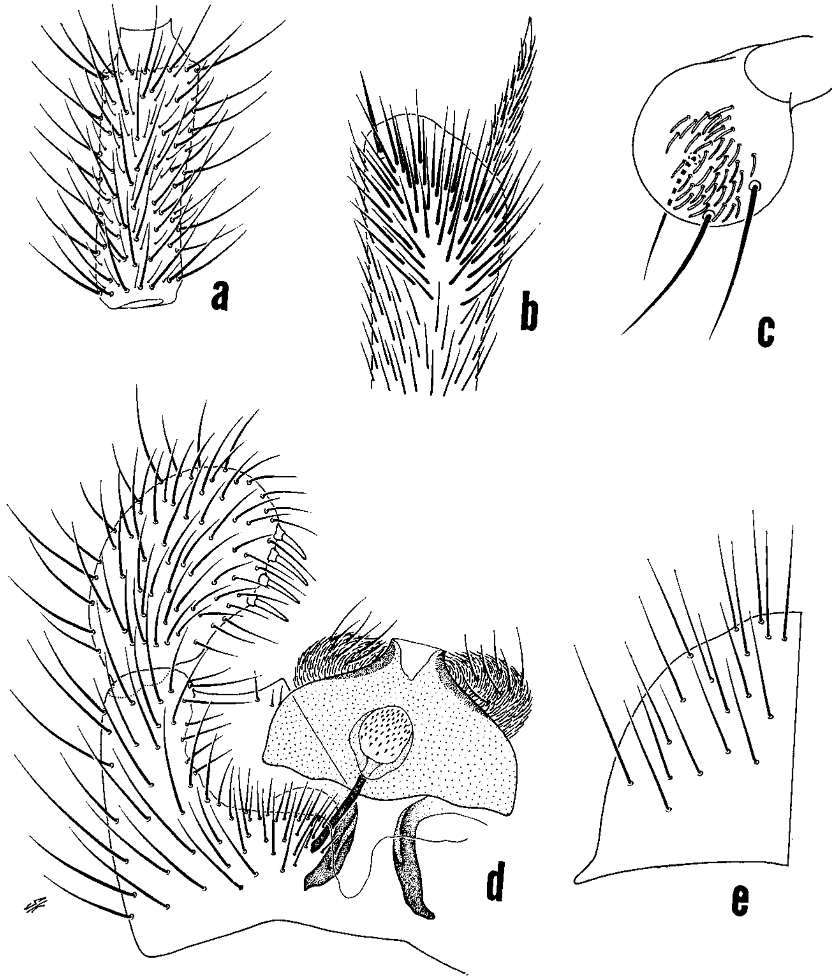


FIGURE 5. *Scythropochroa quadrispinosa.* Male: **a,** flagellomere 4; **b,** apex of fore tibia; **c,** maxillary palpus; **d,** terminalia, ventral view; **e,** tergum IX.

long bristles. Postnotum with 3 stout median setae. Posterior pronotum with 2 setae; anterior pronotum with 5 strong setae. Proepisternum with 8 to 10 strong median setae. Proepimeron well developed; posterior mesoepimeron well developed.

Legs: Fore-leg ratio 27:31:16:6, hind-leg ratio 40:46:19:7. Fore and mid tibiae without enlarged setae; fore tibial comb (fig. 6, *c*) composed of large triangular patch of elongate and slightly enlarged setae. Hind tibia with slightly enlarged posterodorsal setae along posterior 1/3, apex with 8 enlarged setae, spurs about 1.5 × longer than diameter of tibial apex. Tarsal claws with 1 large submedian tooth.

Wing: (fig. 6, *a*); length 2.3 mm, width 1.0 mm. R-M index 0.9, C-M index 0.6. Costa, R_1, R_5 and r-m with macrotrichia, R_1 and apex of R_5 with macrotrichia on ventral surface; posterior veins bare; r-m 0.9 × length of bM; Cu 1.5 × length of bM. Haltere with 2 rows of setae.

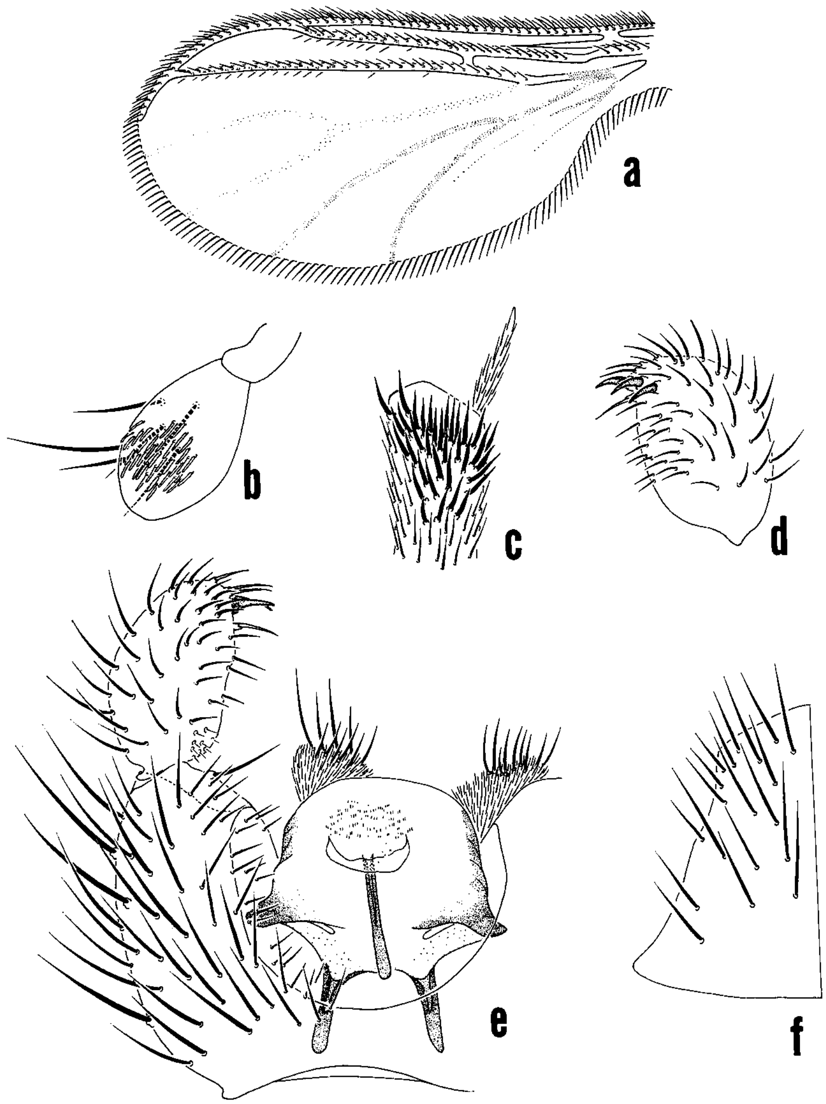


FIGURE 6. *Scythropochroa trispinosa.* Male: **a,** wing; **b,** maxillary palpus; **c,** apex of fore tibia; **d,** distimere, dorsal view; **e,** terminalia, ventral view; **f,** tergum IX.

Abdomen: Abdominal setae strong. Sternum VIII with 2 or 3 posterior rows of setae. Terminalia as in fig. 6, *d-f*. Tergum IX as in fig. 6, *f*; tergum X bilobed; mesoapical setae moderately developed. Dorsal apodeme well developed, extending about 2/3 into genital cavity. Genital rod elongate, with broad apical fork; tegmen as in fig. 6, *e*. Distimere ovate (fig. 6, *d*) with 3 stout mesoapical spines.

FEMALE. Unknown.

Holotype, ♂ (BISHOP 8222), Carlson I., Kwajalein A., Marshall Is., Oct. 31-Nov. 4, 1964, Malaise trap, Perkins.

MATERIAL EXAMINED: ♂ on slide.

DISTRIBUTION: Marshall Is.

Genus **Epidapus** Haliday

Epidapus Haliday, IN Walker, 1851, Ins. Britannica **1:** 7 (Type species: *Chionea venatica* Haliday, subsequently monobasic in Walker, 1856, Ins. Britannica, **3:** 56 = *Tipula atomaria* Degeer, 1778, Mem. Serv. l'Hist. Ins. **7:** 602, *sensu* Czizck, 1915, Wien. Ent. Zeit. **34:** 370). —Schmitz, 1919, Tijdschr. Ent. **61:** 88. —Frey, 1942, Notul. Ent. **22:** 42; 1948, Notul. Ent. **26:** 72. —Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **24:** 96. —Steffan, 1966, Univ. Calif. Publ. Ent. **44:** 44.

Atomaria Bigot, 1854, Ann. Soc. Ent. France **3**(2): 454 (Type species: *Tipula atomaria* Degeer, 1778, by subsequent designation).

Pholeosciara Schmitz, 1915, Tijdschr. Ent. **58:** 285 (Type species: *Pholeosciara melina* Schmitz, 1915, by original designation = *Tipula atomaria* Degeer).

Corynoptera, *sensu* Schmitz, 1919, Tijdschr. Ent. **61:** 93.

MALE. *Head:* Interfacetal hairs short and sparse; eye bridge complete, 1 to 2 facets wide; flagellomere 4 about 3.0–4.0 × longer than wide, with distinct neck (about 0.3–0.4 × length of joint); flagellar hairs 1.2–1.8 × longer than diameter of joint. Palpus 1-segmented, usually with more than 1 seta and with numerous basiconic sensillae. Clypeus bare. Labellum reduced.

Thorax: Notal setae moderately developed. Posterior pronotum with setae.

Legs: Tibial spurs 1:2:2. Basitarsus of fore leg about 0.4 × length of fore femur. Fore tibia without differentiated apical comb or patch of hairs and without enlarged median setae. Hind tibial spurs subequal to or slightly shorter than diameter of tibial apex. Tarsal claws simple.

Wing: R-M index much greater than 1.0, C-M index about 0.5. Costa, R_1, and R_5 with macrotrichia, posterior veins bare and evanescent. Medial fork symmetrical. Haltere with 1 row of dorsal setae.

Abdomen: Tergal and sternal setae moderately developed. Tergum X bilobed, each lobe simple. Basimeres ventrally simple. Distimere oblong, longer than wide.

FEMALE. Differs from ♂ in following respects: flagellomere 4 only slightly longer than wide. Wings and halteres absent. Eye bridge absent in some species.

5. **Epidapus** sp. A

Only 1 ♀ of this genus is available and, since it is in poor condition, it is impossible to identify it and inadvisable to describe it as a new species.

The following characters are discernible:

Head: Interfacetal hairs sparse, short; eye bridge complete, 1 facet wide at junction, becoming 2 facets wide near lateral end of bridge. Antenna: flagellomere 4 slightly broader than long, with short neck (0.30), flagellar hairs long, as long as or slightly longer than diameter of flagellomere. Labellum reduced. Palpus 1-segmented with 1 dorsal and 2 apical setae and numerous large dorsal basiconic sensillae.

Thorax: Notum flat with scattered moderately developed setae. Pleural sclerites and location of setae indistinct.

Legs: Fore-leg ratio (10X) 28:35:12:5, hind-leg ratio 40:47:14:6. Tibiae without enlarged setae. Fore tibial comb absent. Hind tibia with 2 slightly enlarged preapical dorsal setae. Tibial spurs of mid and hind tibiae short (distinctly less than diameter of tibial apex) and double. Tarsal claws simple.

Wings and *halteres:* Absent.

Abdomen: Sparsely haired with moderate setae. Cercus normal. Vaginal furca indistinct.

MATERIAL EXAMINED: 1 ♀.

DISTRIBUTION: Caroline Is. (Palau).

PALAU. ♀, Angaur I., May 2, 1948, under bark, Dybas.

Genus **Plastosciara** Berg

Pseudosciara Kieffer, 1898, Bull. Soc. Ent. France **1898:** 194, *nec* Schiner, 1866 (Type species: *Pseudosciara pictiventris* Kieffer by original designation).

Plastosciara Berg, 1899, Comun. Mus. Nac. Buenos Aires **1:** 78 (new name for *Pseudosciara* Kieffer). (Type species: *Pseudosciara pictiventris* Kieffer, by original designation). —Frey, 1942, Notul. Ent. **22:** 34; 1948, Notul. Ent. **27:** 70. —Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 31. —Hardy, 1960, IN Zimmerman, Insects of Hawaii **10:** 212. —Steffan, 1966, Univ. Calif. Publ. Ent. **44:** 47.

Peyerimhoffia Kieffer, 1903, Ann. Soc. Sci. Bruxelles **27:** 198 (Type species: *Peyerimhoffia brachyptera* Kieffer, by subsequent designation Enderlein, 1911). —Frey, 1942, Notul. Ent. **22:** 41; 1948, Notul. Ent. **27:** 72.

Termitosciara Schmitz, 1915, Tijdschr. Ent. **58:** 281 (Type species: *Termitosciara biarticulata* Schmitz, by original designation).

Neosciara (*Dendrosciara*) Frey, 1942, Notul. Ent. **22:** 33 (Type species: *Sciara corticalis* Lengersdorf, by original designation); 1948, Notul. Ent. **27:** 55.

Decembrina Frey, 1942, Notul. Ent. **22:** 34 (Type species: *Decembrina prima* Frey, by original designation).

Cosmosciara Frey, 1942, Notul. Ent. **22:** 39 (Type species: *Plastosciara perniciosa* Edwards, by original designation).

Spathobdella Frey, 1948, Notul. Ent. **27:** 72 (Type species: *Sciara cunctans* Winnertz, *sensu* Frey 1948, *nec Sciara cunctans* Winnertz 1871 = *Sciara nobilis* Winnertz, 1867).

Plastosciara (*Cosmosciara*) Frey, Frey 1948, Notul. Ent. **27:** 88.

Plastosciara (*Decembrina*) Frey, Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 31.

Plastosciara (*Spathobdella*) Frey, Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 35.

Plastosciara (*Termitosciara*) Schmitz, Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21**: 39.

Plastosciara (*Peyerimhoffia*) Kieffer, Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21**: 40.

Male. *Head:* Interfacetal hairs sparse and generally short; eye bridge 3 to 5 facets wide; flagellomere 4 generally short, as long as wide or slightly shorter, relative length of flagellar hairs variable—either slightly longer than diameter of joints or shorter; neck of flagellomeres 0.3–0.5 × length of joint. Palpus 2-segmented (in some extralimital species, 3-segmented); segment 1 with 3 or 4 setae and without sensory pit; segment 2 reduced. Clypeus bare. Labellum moderately developed.

Thorax: Acrostichals weak to moderately developed, dorsocentrals well developed. Posterior pronotum bare (bristled in many Northern European species). Posterior mesoepimeron normal.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg about 0.5–0.6 × length of fore femur. Fore tibia without enlarged setae; apical setae of fore tibia undifferentiated or with indistinct patch of setae slightly longer than general tibial vestiture. Hind tibia usually with enlarged posterodorsal setae, spurs subequal to or slightly shorter than diameter of tibial apex.

Wing: R-M index 1.8–3.2, C-M index 0.6–0.7. Costa, R_1, R_5 and occasionally r-m with macrotrichia; posterior veins bare; medial fork symmetrical. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae variable in length. Tergum X bilobed. Distimere elongate or acuminate, usually with at least 1 strong apical spine. Genital rod usually elongate with broad apical fork.

Female. Similar to ♂.

Kieffer (1898) proposed *Pseudosciara* (*nec Pseudosciara* Schiner) for a species having "bare" eyes, short-haired antennae, 2-segmented palpi, simple tarsal claws, and elongated abdomen. Since this name was preoccupied, Berg (1899) proposed the new name *Plastosciara* for this taxon. Actually, the eyes are sparsely haired and not "bare."

Tuomikoski (1960) considerably enlarged the limits of this genus to include the genera *Cosmosciara* Frey (= *Termitosciara* Schmitz), *Decembrina* Frey, *Peyerimhoffia* Keiffer, *Spathobdella* Frey, and *Termitosciara* Schmitz. He placed the 14 Finnish species in 5 subgenera, *Decembrina*, *Plastosciara*, *Spathobdella*, *Termitosciara*, and *Peyerimhoffia*. He does not recognize the 2-segmented palpi as a major character distinguishing this genus. Likewise, I believe that other characters are more important; however, a thorough world-wide study of species of *Plastosciara* and related genera is needed before an adequate definition of the limits of this genus is proposed.

Key to Species of Plastosciara in Micronesia

1. Flagellomere 4 short, usually about as long as wide; interfacetal hairs short and sparse......2
   Flagellomere 4 about 2 × as long as wide; interfacetal hairs long and abundant; distimere short and cuneate, with 2 stout apical pines..........................**8. yapensis**

2. Flagellomere 4 with numerous long hyaline sensillae; stem of flagellomere distinct; eye bridge usually 3 facets wide; distimere cuneate with 1 stout apical spur, surrounded by 4 weaker spines..**6. jaluitensis**
   Flagellomere 4 with few long hyaline sensillae and with several very short spines; eye bridge broad, 4 to 5 facets wide; distimere elongate, blunt with stout, composite subapical spur ....**7. latipons**

6. Plastosciara jaluitensis Steffan, n. sp. (fig. 7, *a-f*)

MALE. *Head:* Interfacetal hairs sparse, extending only slightly beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide at junction. Median ocellar bristles strong. Antenna: scape subequal in diameter to pedicel, with 3 strong ventral setae; pedicel with 1 transverse row of setae on distal 1/3; flagellomere 4 (fig. 7, *b*) short, about as long as wide with distinct neck (0.50), flagellar hairs long, subequal to or slightly longer than diameter of flagellomeres. Prefrons with 5 strong median setae. Clypeus bare. Labellum relatively small. Palpus 2-segmented (fig. 7, *c*), segment 1 club-shaped with 4–5 setae and numerous basiconic sensillae on dorsum of swollen portion; segment 2 slightly narrower than 1 and slightly less than 1/2 as long, with 5 setae.

Thorax: Acrostichals moderately developed extending slightly beyond posterior 1/2; dorsocentrals well developed. Scutellum with 6 posterior setae and several scattered smaller anterior setae. Posterior pronotum bare; anterior pronotum with 2 strong posterior setae. Proepisternum with 4 strong setae subequal to those of *apn*. Proepimeron well developed, elongate; posterior mesoepimeron well developed, about 1.5 × longer than wide. Metanotal apodeme short and broad.

Legs: Fore-leg ratio 17:20:9:3; hind-leg ratio 21:27:9:4. Setae of fore tibia largely subequal, none distinctly enlarged; fore tibial apex (fig. 7, *d*) without differentiated setae. Mid tibial setae undifferentiated. Hind tibia with some slightly enlarged posterodorsal setae along distal 1/2; apex with 1 enlarged seta. Tarsal claws simple.

Wing: (fig. 7, *a*); length 1.1 mm, width 0.5 mm. R-M index 2.6, C-M index 0.7. Costa, R_1 and R_5 with macrotrichia, other veins bare; r-m 0.8 × length of bM; Cu 0.6 × length of bM. Haltere short with short stem and 1 row of dorsal setae.

Abdomen: Tergal setae strong, sternal setae subequal. Sternum VIII with 1 posterior row of setae. Terminalia as in fig. 7, *e*; tergum IX as in fig. 7, *f*; tergum X bilobed, each lobe simple. Basimeres ventrally narrowly joined without differentiated median setal groups, mesoapical setae not strongly differentiated from other setae of basimere. Dorsal apodeme short and extending almost to anterior margin of genital cavity, broadly separated. Genital rod moderately elongated with flattened apical fork. Tegmen as in fig. 7, *e*. Distimere acuminate distally with strong apical spur surrounded by 4 to 5 thinner but subequal spines.

FEMALE. Unknown.

Holotype ♂, (BISHOP 8223), Enybor I., Jaluit A., Marshall Is., Nov. 10–12, 1964, Malaise trap, Perkins.

MATERIAL EXAMINED: One ♂ on slide.

DISTRIBUTION: Marshall Is.

This species may be what Edwards (1928) called *Plastosciara perniciosa* and recorded from Samoa and the Marquesas. Hardy (1960) mentioned that Edwards and others may have been dealing with a complex of related species and I agree. Additional material from Micronesia and other areas of the Pacific and Orient is needed before this problem can be resolved.

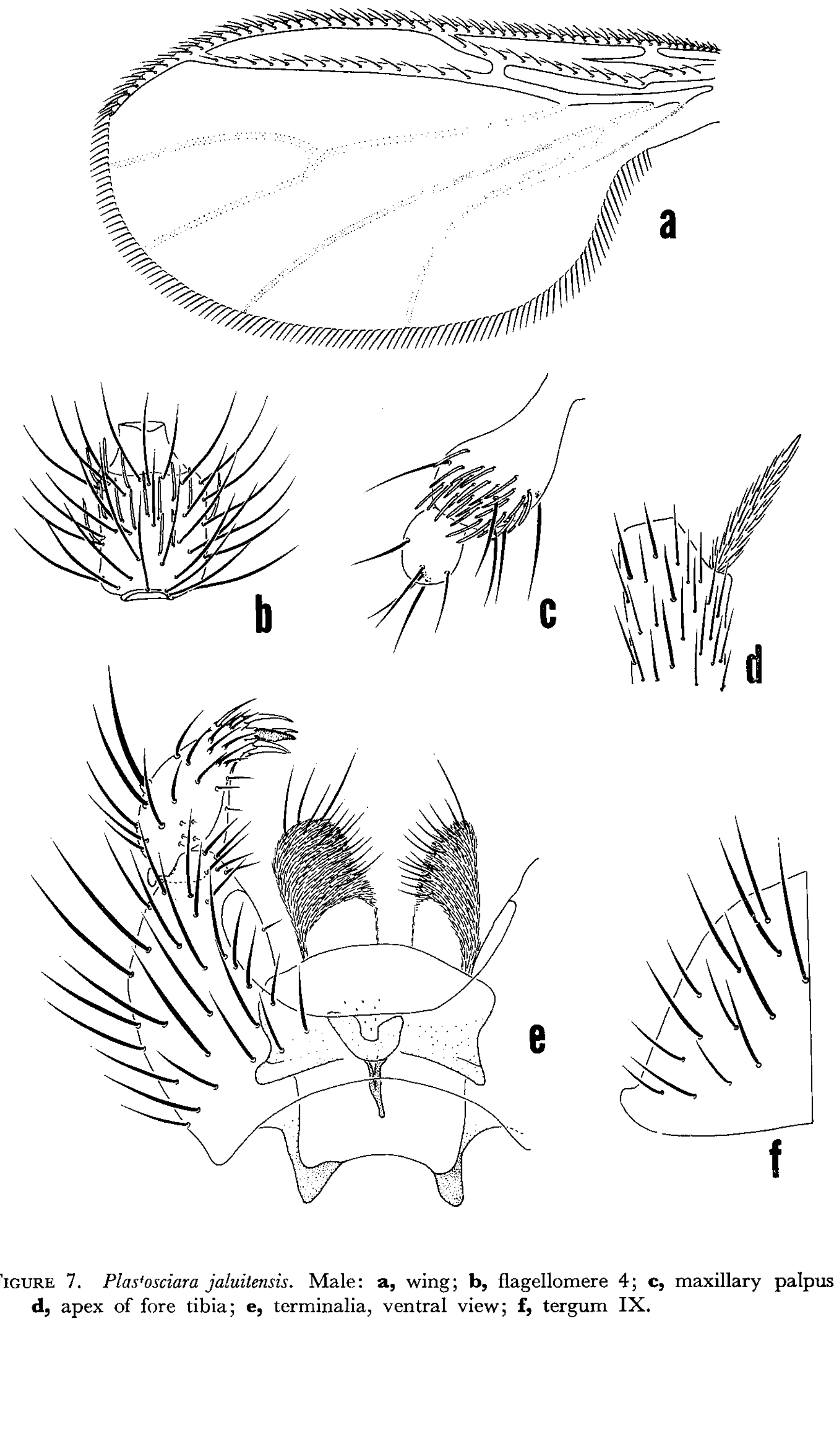


FIGURE 7. *Plastosciara jaluitensis*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX.

7. Plastosciara latipons Hardy (fig. 8, *a-h*).

Plastosciara (*Plastosciara*) *latipons* Hardy, 1956, Proc. Haw. Ent. Soc. **16:** 77; 1960, IN Zimmerman, Insects of Hawaii **10:** 217.

MALE. *Head:* Interfacetal hairs sparse, extending well beyond outer curvature of facets; eye bridge broadly joined, 4 to 5 facets wide at junction. Median ocellar bristles well developed. Antenna: scape subequal in diameter to pedicel, with 1 median transverse row of strong setae almost 2 × length of setae on pedicel; pedicel with moderately developed setae along distal 1/2; flagellomere 4 (fig. 8, *b*) short, about as long as wide, neck well developed (0.4–0.5); flagellar hairs long, as long as to slightly longer than diameter of flagellomeres. Prefrons narrow, with 2 to 6 strong setae. Clypeus bare. Labellum moderately developed. Palpus 2-segmented (fig. 8, *c*), segment 1 swollen, with 3 or 4 setae and numerous basiconic sensillae; segment 2 reduced, about 1/3 diameter of 1 and about 1/3 length of 2, with 2–3 terminal setae.

Thorax: Acrosticals poorly developed, restricted to anterior fourth; dorsocentrals well developed, supraalar setae very long. Scutellum with 2 long posterior setae and several weak lateral setae. Posterior pronotum bare; anterior pronotum with 3 posterior setae (occasionally with 1 anterior seta). Proepisternum with 2 to 5 setae, subequal to *apn* setae. Proepimeron poorly developed; posterior mesoepimeron normal, about 2 × longer than wide. Metanotal apodeme short and broad.

Legs: Fore-leg ratio 14:15:5:2 (range of tibial length 14–17); hind-leg ratio 18:20:8:3 (range of tibial length 18–23). Fore and mid tibiae without differentiated or enlarged setae; apex of fore tibia (fig. 8, *d*) without distinct comb, setae only slightly larger and not separated from other tibial setae. Hind tibia with slightly enlarged posterodorsal setae along distal half, apex with 2 slightly enlarged setae; spurs slightly shorter than diameter of tibial apex. Tarsal claws simple.

Wing: (fig. 8, *a*); length 1.1–1.3 mm, width 0.5 mm. R-M index 2.1, C-M index 0.6. Costa, R_1, R_5 and r-m with macrotrichia, bM occasionally with setae distally, other veins bare; r-m 0.5–0.8 × length of bM; Cu 0.2–0.3 × length of bM. M evanescent and vein distinct. Haltere with short stem and 1 row of dorsal setae on knob.

Abdomen: Tergal and sternal setae short; sternum VIII with 1 posterior row of setae. Terminalia as in fig. 8, *e*; tergum IX distinctly wider than long (fig. 8, *f*); tergum X bilobed, each lobe simple. Basimeres ventrally narrowly joined, without differentiated median setal groups; mesoapical setae moderately developed, less than 1/2 length of distimere. Dorsal apodeme short and broad, extending about 2/3 way into genital cavity. Genital rod moderately elongated. Tegmen as in fig. 8, *e*. Distimere about 3 × longer than wide, finger-like, with stout mesoapical spur apparently composed of 3 fused spines, apex tridentate.

FEMALE. Similar to ♂. Flagellomere 4 about 0.8 × that of ♂. Wing length 1.3 mm. Cercus as in fig. 8, *g*. Vaginal furca (fig. 8, *h*), stem elongate, arms arising posteriorly.

MATERIAL EXAMINED: 42 ♂♂ and 5 ♀♀ on slides.

DISTRIBUTION: Hawaii and Micronesia.

PALAU. BABELTHUAP: ♂, Ngaremlengui (Ngeremlengui), Jun. 1957, Sabrosky. PELELIU: ♂, May 1957, Sabrosky.

YAP. ♂, hill behind Yaptown, Dec. 1952, Gressitt.

MARSHALL IS. ENIWETOK: 23 ♂♂, Jobtan I. (Japten), Aug. 1956, Tuthill; ♂, same locality, Sep. 1956, Tuthill; ♀, same locality, Aug. 1956, Tuthill. KWAJALEIN: 12 ♂♂, Kwajalein I., Sep. 1956, Malaise trap, Clagg; 4 ♀♀, same locality, Sep. 1956, light trap, Clagg.

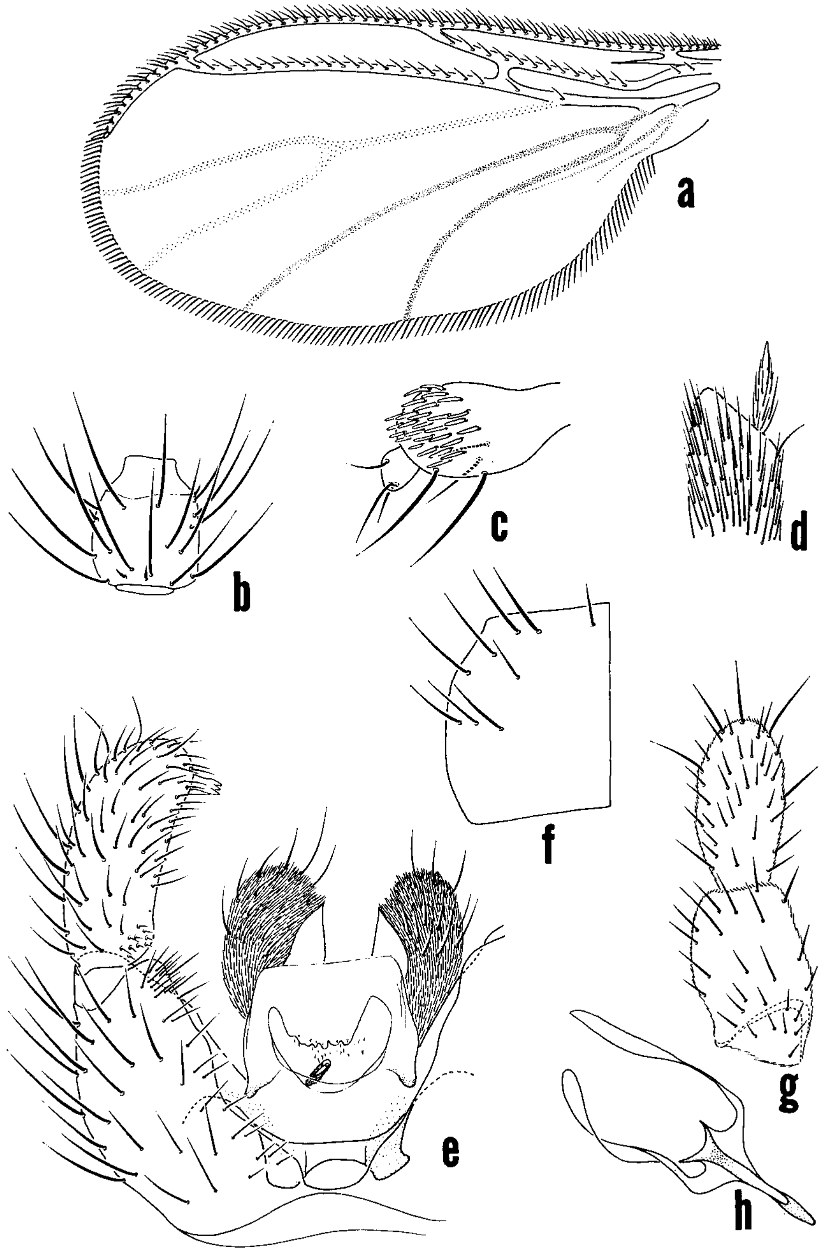


FIGURE 8. *Plastosciara latipons*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX. Female: **g,** cercus; **h,** vaginal furca, ventral view.

Plastosciara latipons was originally described from the Hawaiian Islands (Hardy, 1956). The female was unknown. Until more material from the western Pacific area is studied, the origin of this species cannot be determined.

8. Plastosciara yapensis Steffan, n. sp. (fig. 9, *a-f*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge 2 facets wide at junction. Median ocellar bristles (2) well developed. Antenna: scape with 1 very long and 3 or 4 shorter median (transverse) setae; pedicel slightly narrower than scape, but longer, with scattered, moderately developed setae along distal 1/2; flagellomere 4 (fig. 9, *b*) slightly more than 2 × longer than wide, neck about 0.3 × length of flagellomere; flagellar hairs subequal in length to flagellar diameter. Prefrons with 4 strong ventral setae. Clypeus bare. Labellum weakly developed. Palpus 2-segmented (fig. 9, *c*), segment 1 swollen apically with 2–3 setae and numerous dorsal basiconic sensillae, segment 2 reduced, with 2 apical setae.

Thorax: Acrostichals moderately developed along anterior 1/3 to 1/2; dorsocentrals well developed. Scutellum with 2 large posterior and 2 or 3 small lateral setae. Posterior pronotum bare; anterior pronotum with 1 or 2 strong setae. Proepisternum with 4 well developed median setae. Proepimeron well developed; posterior mesoepimeron short and square. Metanotal apodeme broad and elongate.

Legs: Fore-leg ratio 11:12:5:3; hind-leg ratio 15:16:7:3. Fore and mid tibia without differentiated setae; fore tibial comb (fig. 9, *d*) composed of a triangular patch of slightly elongated setae contiguous with other tibial setae. Hind tibia with slightly enlarged posterodorsals along distal 1/2; apex with 6 enlarged setae in irregular row; spurs shorter than diameter of tibial apex. Tarsal claws simple.

Wing: (fig. 9, *a*); length 0.9–1.0 mm, width 0.3 mm. R-M index 3.2; C-M index 0.6. Costa, R_1 and R_5 with macrotrichia, other veins bare and evanescent. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae sparse and relatively short. Sternum VIII with 1 posterior row of setae. Terminalia as in fig. 9, *e*; tergum IX trapezoidal (fig. 9, *f*); tergum X bilobed. Basimeres narrowly joined ventrally, without differentiated setal groups; mesoapical setae poorly developed. Dorsal apodeme well developed, long and relatively narrow extending almost to anterior margin of genital cavity. Genital rod short. Tegmen as in fig. 9, *e*. Distimere cuneate with 2 strong apical spurs.

FEMALE. Unknown.

Holotype, ♂ (US 70557), hill behind Yaptown, Yap I., Dec. 3, 1952, 50 m, light trap, Gressitt; paratypes (US, BISHOP), 3 ♂♂, same data except Dec. 1, 1952; ♂, Gagil, Gachapar, Jun. 19, 1957, at light, Sabrosky.

MATERIAL EXAMINED: 5 ♂♂ on slides.

DISTRIBUTION: Caroline Is. (Yap).

This species does not fit well in Tuomikoski's concept of *Plastosciara;* however, until a more thorough study of other species in this group is made, I am following Edwards in placing some species with 2-segmented maxillary palpi in *Plastosciara. Plastosciara yapensis* seems to be close to *Plastosciara flavibasis* Edwards (1928) from Samoa, especially in the structure of the distimere. *P. flavibasis*, however, has a wider eye bridge (3 facets wide) and the medial fork is narrow.

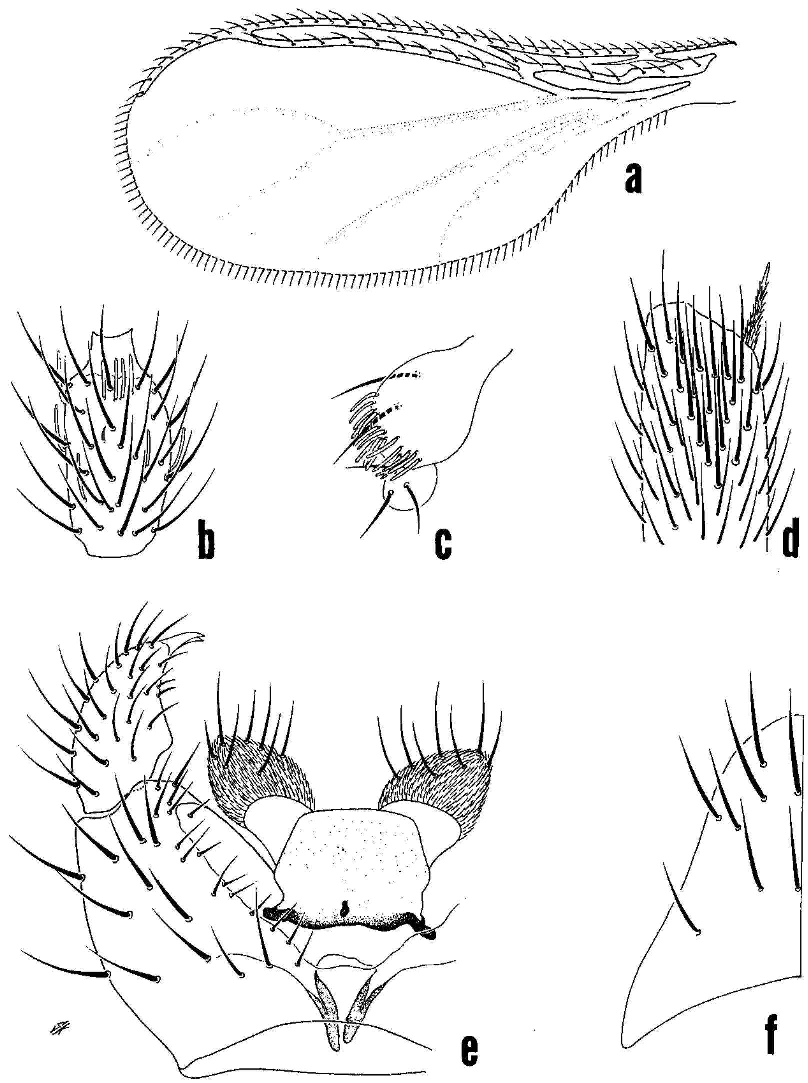


FIGURE 9. *Plastosciara yapensis*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX.

Genus **Corynoptera** Winnertz

Corynoptera Winnertz, 1867, Zool. Bot. Gesell. Wien **1867:** 177 (Type species: *C. perpusilla* Winnertz, by subsequent designation, Enderlein, 1911, Arch. f. Naturgesch. **77:** 127). —Schmitz, 1919, Tijdschr. Ent. **61:** 93. —Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 42. —Steffan, 1966, Univ. Calif. Publ. Ent. **44:** 48.

MALE. *Head:* Abundance and length of interfacetal hairs variable; eye bridge broadly joined, 2 to 4 facets wide; flagellomere 4 at least 1.2 × longer than wide, generally longer; flagellar hairs variable in length, in Micronesian species frequently mounted on distinct tubercles; flagellar necks distinct, 0.2–0.4 × length of joint. Palpus 3-segmented, segment 1 with 1 to 5 dorsal setae, sensillae usually on dorsal surface, occasionally set in distinct sensory pit; segments 2 and 3 generally normal, occasionally somewhat shortened. Labellum well developed.

Thorax: Acrostichals variable, dorsocentrals well developed. Posterior pronotum bare. Posterior epimeron of mesothorax normal.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg 0.5–0.7 × length of fore femur; fore tibia usually without enlarged median setae, occasionally with several slightly enlarged setae; tibial comb generally consisting of a patch of enlarged setae, occasionally set in a shallow pit, bordered proximally by a distinct line, also comb rarely 1-rowed (if 1-rowed, then 1st palpal segment with only 1 dorsal seta). Hind tibia with well developed posterodorsals and spurs distinctly longer than diameter of tibial apex. Tarsal claws generally simple, occasionally toothed.

Wing: R-M index 1.4 or more; C-M index 0.6–0.7. Costa, R_1 and R_5 with macrotrichia; other veins bare. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae generally strong; sternum VIII with 1 or occasionally 2 rows of posterior setae. Tergum X bilobed. Distimeres variable, mesoapical surface occasionally deeply concave. Genital rod generally long, with broad distal fork.

FEMALE. Similar to ♂. Cercus normal. Stem of vaginal furca generally elongate.

Winnertz (1867) established *Corynoptera* for species having claviform wings, tibiae without lateral spines, scutellum short and sparsely haired, and flagellar segments with verticillate setae. Frey (1942), following Schmitz (1919), considered *Corynoptera* a synonym of *Epidapus*. Tuomikoski (1960) resurrected *Cornynoptera* and considerably enlarged its limits. He based his decision on the assumption that *C. perpusilla*, the type species, fits his concept of *Corynoptera*. *C. perpusilla* could be either a *Vimmeria* or *Caenosciara;* but, since the type no longer exists, it's generic placement cannot be definitely established. He also mentioned that if others do not accept the use of *Corynoptera* for his genus, they should next determine whether the type species of *Psilosciara* Kieffer and *Orinosciara* Lengersdorf belong here.

My interpretation of Tuomikoski's generic concept is somewhat vague. Several seemingly unrelated species come out to *Corynoptera* in his key because they do not fit any place else. My interpretation of *Corynoptera* as represented by Micronesian species is tentative and the species in this heterogenous group need to be studied from a wider area.

The Finnish species of *Corynoptera* breed in forest litter or rotting wood.

KEY TO MICRONESIAN SPECIES OF CORYNOPTERA

1. First palpal segment with 1 to 2 setae; clypeus bare or with only 1 or 2 median setae; distimere with 3 or more stout apical or mesoapical spines....................................4

   First palpal segment with 3 or more setae; clypeus with 5 or more scattered setae; distimere with 2 stout apical or mesoapical spines..2

2. Vein r-m equal to or slightly longer than bM; maxillary palpus usually with 4 or more setae; distimere with long, whip-like preapical seta....................................3
   Vein r-m about 1/3 length of bM; maxillary palpus with 3 setae; distimere blunt apically, with 2 short mesal spines and short preapical setae..............**13. sabroskyi**
3. Flagellomere 4 slender, about 2.5 × longer than wide; distimere with long apical and preapical spines, stem of vaginal furca slender.................................. **14. sylviae**
   Flagellomere 4 shorter, about 2.0 × longer than wide; distimere without apical spines, 2 short preapical spines; stem of vaginal furca swollen medially...**12. ponapensis**
4. First palpal segment with 1 seta; apex of fore tibia with comb roughly unilateral...........5
   First palpal segment with 2 setae; apex of fore tibia with triangular patch of differentiated setae, distimere cuneate, with 1 short, stout apical and 3 smaller preapical spines ....**9. brevipalpis**
5. Apex of fore tibia with unilateral comb bordered proximally by indistinct line; flagellomere 4 short, about 1.2 × longer than wide; flagellar hairs dense; distimere with 1 stout apical and 2 slightly smaller preapical setae, mesal surface straight to slightly convex ....**10. heterochela**
   Apex of fore tibia with comb roughly unilateral and with a few enlarged setae proximally; flagellomere 4 longer, 1.5–2.0 × longer than wide; flagellar hairs sparse; distimere with 4 or 5 subequal apical setae and 1 stronger preapical seta, mesodorsal surface distinctly concave ....**11. latistylata**

9. Corynoptera brevipalpis Steffan, n. sp. (fig. 10, *a-h*)

MALE. *Head:* Interfacetal hairs sparse, extending well beyond outer curvature of facets; eye bridge 2 facets wide at junction, elsewhere 3 facets wide. Median ocellar bristles (2) well developed. Antenna: scape slightly narrower than pedicel with 1 strong and 2 weaker median setae; pedicel with 1 transverse row of weak setae medially; flagellomere 4 (fig. 10, *b*) 2 × as long as wide with short neck (0.25); flagellar hairs about 0.6 × diameter of flagellomeres, mounted on distinct tubercles. Prefrons with 5 strong ventral setae. Clypeus bare. Labellum moderately developed. Palpus 3-segmented (fig. 10, *c*); segment 1 swollen apically with 2 dorsolateral setae and numerous dorsal basiconic sensillae set in a shallow depression; segment 2 reduced, globular, with 5 sesae; segment 3 reduced, ovoid, with 4 setae.

Thorax: Acrostichals and dorsocentrals well developed, supraalar and lateral bristles well developed. Scutellum with 4 strong posterior and 3 weak lateral bristles. Posterior pronotum bare; anterior pronotum with 6 to 8 setae, 2 of them strong; proepisternum with 6 or 7 well developed setae. Proepimeron well developed, pale; katepisternum with posterior mesoepimeron pale; posterior mesoepimeron broad, slightly longer than wide. Metanotal apodeme short and swollen distally.

Legs: Fore-leg ratio 23:29:17:7, hind-leg ratio 33:44:18. Fore tibia with 2 or 3 enlarged posterior setae and 1 or 2 enlarged dorsal setae, fore tibial comb (fib. 10, *d*) composed of a triangular patch of enlarged setae set in a shallow pit. Mid tibia with scattered distinctly enlarged setae. Hind tibia with enlarged posterodorsal setae along distal 2/3 and scattered enlarged dorsals, ventrals and anteriors; apex with 7 enlarged setae, spurs about 1.7 × diameter of tibial apex. Tarsal claws (fig. 10, *e*) with large median tooth.

Wing: (fig. 10, *a*); length 1.7 mm, width 0.6–0.7 mm. R-M index 1.4–1.6, C-M index 0.7. Costa, R_1, R_5, and distal portion of r-m with macrotrichia, other veins bare; r-m subequal to slightly longer than bM; Cu 0.6 × length of bM; all veins distinct. Haltere with 1 dorsal row of setae.

Abdomen: Tergal and sternal setae strong; sternum VIII with single to occasionally double (medially) row of posterior setae. Terminalia as in fig. 10, *f-h*; tergum IX trapezoidal

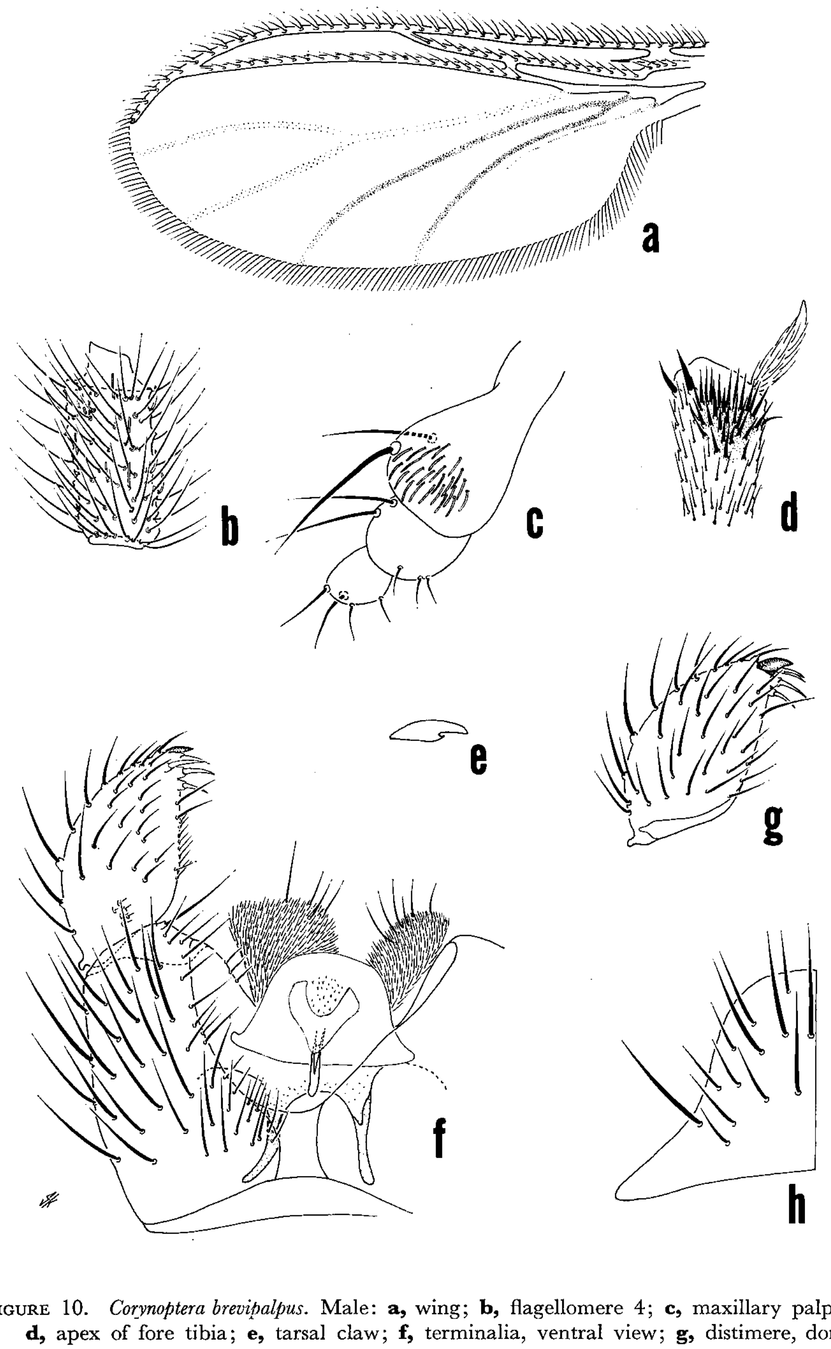


FIGURE 10. *Corynoptera brevipalpus*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** tarsal claw; **f,** terminalia, ventral view; **g,** distimere, dorsal view; **h,** tergum IX.

(fig. 10, *h*); tergum X bilobed. Basimeres narrowly joined ventrally without differentiated setal groups, mesoapical setae moderately developed. Dorsal apodemes well developed, elongate, narrow and extending at least 3/4 into genital cavity. Genital rod short and narrow, fork broadly U-shaped. Distimere (fig. 10, *g*) broad basally and acute distally, with 1 short stout apical spur and 4 smaller mesoapicals.

FEMALE. Unknown.

Holotype, ♂ (US 70558), Imeliik, Netking, Babelthuap I., Palau Is., Jun. 5, 1957, Sabrosky. Paratype (BISHOP) ♂, same data as holotype, except Jun. 6, 1957.

MATERIAL EXAMINED: 2 ♂♂ on slides.

DISTRIBUTION: Caroline Is. (Palau).

10. **Corynoptera heterochela** Steffan, n. sp. (fig. 11, *a-j*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge 3 facets wide at junction, in some places only 2 facets wide. Median ocellar bristles (3) well developed. Antenna: scape and pedicel subequal in diameter, scape with 1 strong and 2 weaker median setae; pedicel with scattered shorter setae on distal 1/2; flagellomere 4 (fig. 11, *b*) about 1.2 × longer than wide, neck distinct (0.40), flagellar hairs slightly smaller than diameter of flagellomeres and mounted on distinct tubercles, making sides of flagellomere irregular; flagellomeres also with a few very short, thin-walled sensillae. Prefrons with median U-shaped group of 8 to 10 strong setae. Clypeus with 1 median dorsal and 1 median ventral seta; labellum well developed. Palpus 3-segmented (fig. 11, *d*), segment 1 slightly swollen with 1 strong dorsal seta and numerous dorsal basiconic sensillae; segment 2 about 0.6 × length of 1st, with 7 setae; segment 3 elongate, subequal to slightly longer than 1, with 6 setae.

Thorax: Acrostichals poorly developed; dorsocentrals and supraalars well developed. Scutellum with 2 strong, 2 moderate and several weak setae. Posterior pronotum bare; anterior pronotum with 2 to 5 strong setae. Proepisternum with 5 or 6 strong median setae. Proepimeron well developed; posterior mesoepimeron normal, about 2 × longer than wide. Metanotal apodeme slightly swollen.

Legs: Fore-leg ratio 19:21:10:4 (range of tibial length 17–21); hind-leg ratio 23:30:12. Fore tibia without enlarged setae; fore tibial comb (fig. 11, *e*) composed of small group of 6 enlarged setae. Mid tibia with some enlarged posterior setae. Hind tibia with enlarged posterodorsal setae along distal 2/3, apex with 6 enlarged setae, spurs almost 2 × diameter of tibial apex. Tarsal claws with distinct teeth above and below (fig. 11, *f*).

Wing: (fig. 11, *a*); length 1.2–1.4 mm, width 0.5 mm. R-M index 2.1–2.6, C-M index 0.6–0.7. Costa, R_1 and R_5, with macrotrichia, other veins bare; r-m 0.7–0.8 × length of bM; Cu 0.5–0.6 × length of bM; all veins relatively distinct. Haltere with 1 dorsal row of setae.

Abdomen: Tergal setae strong, sternal setae slightly shorter; sternum VIII with 1 or occasionally 2 posterior rows of setae. Terminalia as in fig. 11, *g-h*; tergum IX trapezoidal (fig. 11, *h*); tergum X bilobed. Basimeres narrowly joined ventrally, without differentiated setae group; mesoapical setae well developed, about 0.8 × length of distimere. Dorsal apodeme long and slender, extends 3/4 into genital cavity. Genital rod very short, fork elongate and U-shaped. Tegmen as in fig. 11, *g*. Distimere elongate with 1 strong apical and 2 strong mesoapical spurs.

FEMALE. Similar to ♂. Wing length 1.5 mm. Flagellomere 4 (fig. 11, *c*) about 0.7 × length of ♂ flagellomere 4, neck only about 0.2 × length of joint. Cercus as in fig. 11, *j*. Vaginal furca as in fig. 11, *i*; arms join stem posteriorly.

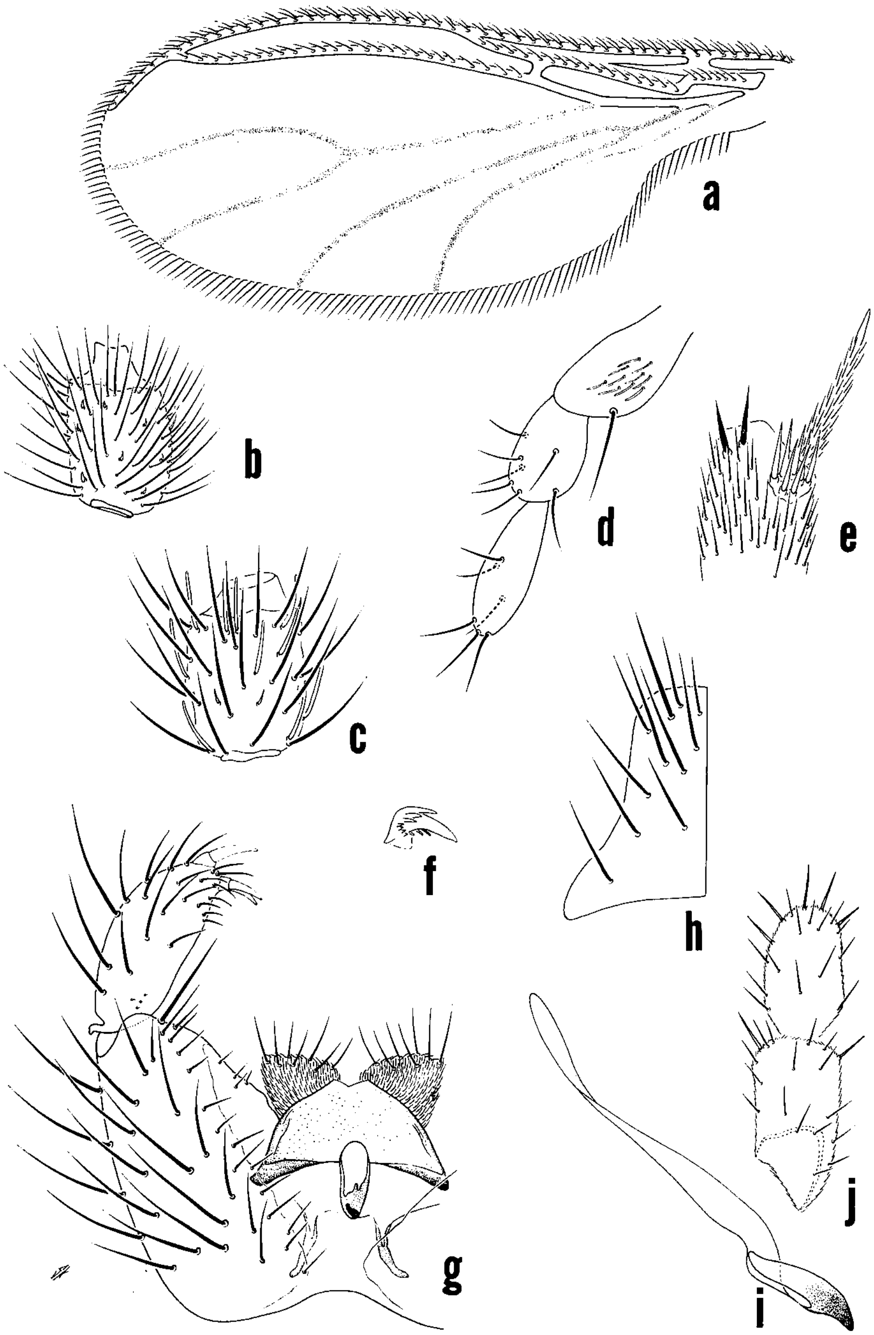


FIGURE 11. *Corynoptera heterochela*. **a,** wing, male; **b,** flagellomere 4, male; **c,** flagellomere 4, female; **d,** maxillary palpus, male; **e,** apex of fore tibia, male; **f,** tarsal claw, male; **g,** terminalia, ventral view, male; **h,** tergum IX, male; **i,** vaginal furca, female; **j,** cercus, female.

Holotype, ♂ (BISHOP 8224), Temwetemwensekir (Tamatamansakir) Mt., Ponape I., 180 m, Jan. 19, 1953, light trap, Gressitt. Allotype, ♀ (US), same data as holotype. Paratypes, (BISHOP, US) 8 ♂♂, ♀, same data as holotype; ♂ Ngaremlengui (Ngeremlengui), Babelthuap I., Jun. 4, 1957, at light, Sabrosky; 2 ♂♂, S. Nanpohnmal (Nanponmal), Ponape I., Jan. 12, 1953, 70 m, light trap, Gressitt.

MATERIAL EXAMINED: 12 ♂♂, 2 ♀♀ on slides.

DISTRIBUTION: Caroline Is. (Ponape and Palau).

Corynoptera heterochela is distinctive in that the anterior margin of the tarsal claws has distinct teeth (fig. 11, *f*). It does not fit well in any of Tuomikoski's species groups.

11. Corynoptera latistylata (Hardy) **NEW COMBINATION** (fig. 12, *a-h*)

Sciara (*Lycoriella*) *latistylata* Hardy, 1956, Proc. Haw. Ent. Soc. **16**(1): 82; 1960, IN Zimmerman, Insects of Hawaii **10:** 225.

MALE. *Head:* Interfacetal hairs abundant and short, extending slightly beyond outer curvature of facets; eye bridge 3 facets wide at junction, occasionally 4 facets wide above antennae. Median ocellar bristles (3) well developed. Antenna: scape and pedicel subequal in diameter, scape with 1 strong and 3 weaker median transverse setae; pedicel with 1 distal row of moderate setae; flagellomere 4 (fig. 12, *b*) about 1.5–2.0 × longer than wide with well developed neck (0.3–0.4); flagellar hairs subequal to flagellar diameter; hyaline sensillae sparse. Prefrons narrow with 10 ventral setae. Clypeus bare. Palpus 3-segmented (fig. 12, *c*); segment 1 with 1 strong dorsolateral seta and numerous dorsal basiconic sensillae, swollen distal 2/3; segment 2 oval with 6 setae, slightly more than 1/2 as long as 1 and about 3/4 as wide; segment 3 elongate, subequal in length to 1 but about 1/2 as wide, with 4 setae. Labellum well developed.

Thorax: Acrostichals moderately developed; dorsocentrals well developed; supraalars strong, about 2 × as long as dorsocentrals. Scutellum with 4 strong posterior and 4 weaker lateral setae, also several smaller anterior setae. Posterior pronotum bare; anterior pronotum with 1 strong and 2 weaker posterior setae. Proepisternum with 4 moderate to strong median setae. Proepimeron well developed; posterior mesoepimeron normal, 1.3 × longer than wide. Metanotal apodeme moderately long and narrow.

Legs: Fore-leg ratio 15:18:7:3 (range of tibial length 18–20); hind-leg ratio 20:26:10:4 (range of tibial length 26–30). Fore tibia without strong differentiated setae; fore tibial comb (fig. 12, *d*) composed of 7 slightly enlarged setae roughly unilateral, without distinct bare area proximally. Mid tibia with some slightly enlarged dorsal and posterior setae. Hind tibia with distinctly enlarged and elongated posterior setae along distal 1/2, with scattered slightly enlarged dorsal and anterior setae, apex with 10 enlarged setae, spurs almost 2 × as long as diameter of tibial apex. Tarsal claws simple.

Wing: (fig. 12, *a*); length 1.1–1.3 mm, width 0.4–0.5 mm. R-M index 2.2–2.8, C-M index 0.6. Costa, R_1 and R_5 with macrotrichia, other veins bare, r-m 0.5–0.7 × length of bM; Cu 0.2–0.3 × length of bM. M, M_1, M_2, and base of Cu evanescent; anal vein distinct. Haltere with 1 dorsal row of setae.

Abdomen: Tergal and sternal setae strong; sternum VIII with 1 row of posterior setae. Terminalia as in fig. 12, *e-h*; tergum IX trapezoidal (fig. 12, *h*); tergum X bilobed. Basimeres ventrally broadly joined, without median differentiated setal groups; mesoapical moderately

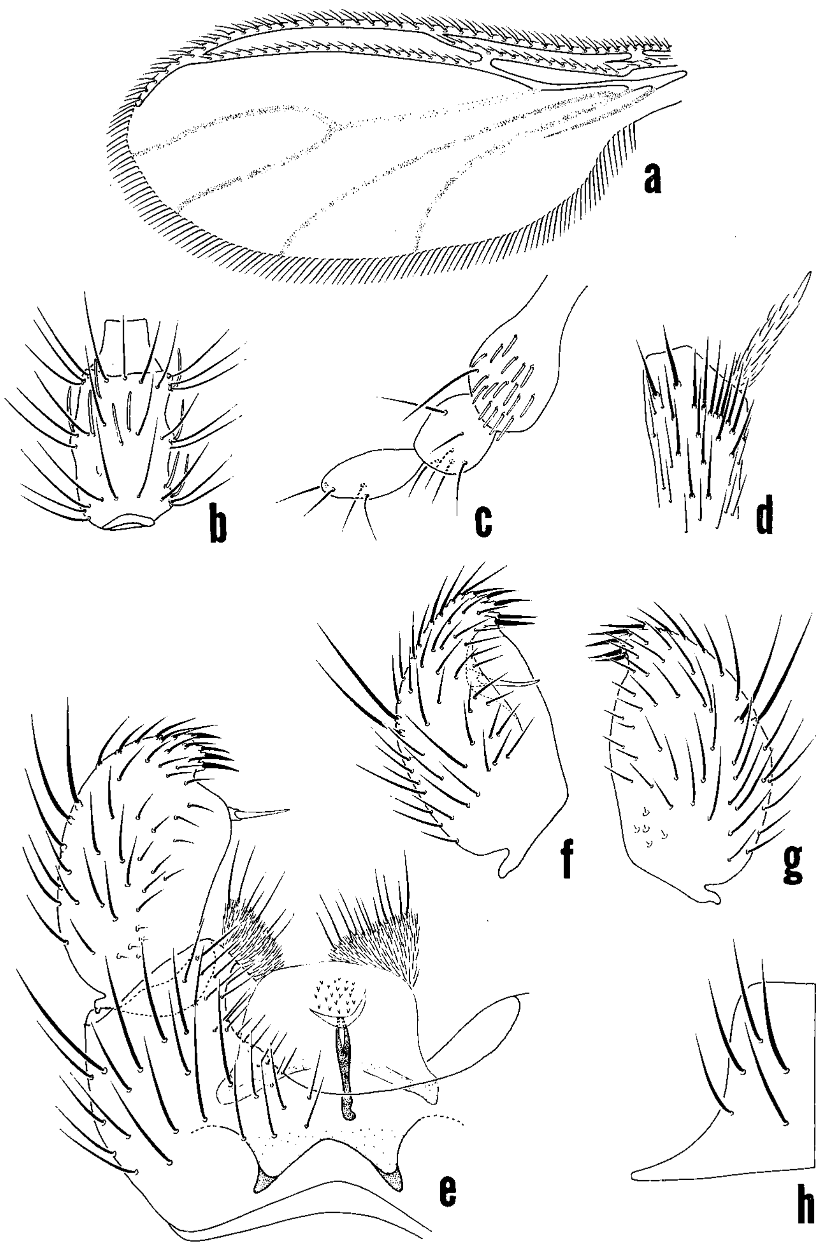


FIGURE 12. *Corynoptera latistylata,* Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** distimere, ventral view; **g,** distimere, dorsal view; **h,** tergum IX.

developed. Dorsal apodeme inflated proximally, extending about 3/4 way into genital cavity. Genital rod long and narrow with broadly forked apex. Distimere (fig. 12 *e-g*) ovate with 4 mesoapical spines and 1 very long preapical spine set in a concavity.

FEMALE. Unknown.

MATERIAL EXAMINED: 2 ♂♂.

DISTRIBUTION: Hawaiian Is. and Micronesia.

S. MARIANA IS. SAIPAN: ♂, As Mahetog area, Lot 447, at light, Jan. 1945, Dybas.

MARSHALL IS. ENIWETOK: ♂, Jobtan (Japtan) I., at light, Aug. 1956, Tuthill.

This species appears to be very similar, if not identical, to *Sciara infantula* Edwards (1931), described from Fort de Kock, Sumatra; however, the Pacific material needs to be critically compared with the type before any change in status is made. Edwards (1931) mentions that *infantula* resembles the European *Sciara tricuspidata* Winnertz; however, Tuomikoski (1960) places *tricuspidata* Winnertz, *sensu* Edwards (1925) in the genus *Scatopsciara*. Also, the distimere, figured by Frey (1948) (as *Scaptosciara leucoptera* Frey) is quite different from that of either *infantula* or *latistylata*. In Tuomikoski (1960), *latistylata* comes out in his *forcipata* group and keys out near *Corynoptera parvula* (Winnertz).

The position of the strong mesal spine in some mounted specimens is variable (fig. 12, *e-g*) depending on whether the mesal surface is collapsed or expanded.

12. **Corynoptera ponapensis** Steffan, n. sp. (fig. 13, *a-g*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide. Median ocellar bristles (2) moderately developed. Antenna: scape with 1 median transverse row of 4 strong setae; pedicel with irregular row of moderately developed setae on distal 1/3; flagellomere 4 (fig. 13, *b*) about 1.6–2.0 × longer than wide with short neck (0.20) and flagellar hairs about 0.7 × diameter of flagellomere. Prefrons with 11–18 scattered setae. Clypeus with 3 to 6 scattered setae. Palpus 3-segmented (fig. 13, *c*); segment 1 slightly swollen distally, with 4 or 5 dorsal setae and several scattered basiconic sensillae dorsally; segment 2 with 6 setae and segment 3 with 6 setae.

Thorax: Acrostichals weak, restricted to anterior 1/3 of notum; dorsocentrals moderately developed, about 1/2 length of longest supraalars. Scutellar bristles strong, subequal to supra-alars. Posterior pronotum bare; anterior pronotum with 2 or 3 posterior setae. Proepisternum with 4 median setae subequal in length to *apn* setae. Proepimeron well developed; posterior mesoepimeron normal, about 1.5 × longer than wide. Metanotal apodeme slightly swollen medially.

Legs: Fore-leg ratio 21:29:17:6 (range of tibial length 28–33); hind-leg ratio 29:41:19:6 (range of tibial length 41–46). Setae of fore tibia subequal; fore tibial comb (fig. 13, *d*) composed of a narrow patch of about 10 setae set in a shallow pit. Mid tibia with 1 or 2 enlarged posterodorsal setae. Hind tibia with enlarged posterodorsal setae along distal 2/3, and with some slightly enlarged anterior setae; spurs about 1.6–1.8 × length of diameter of tibial apex. Tarsal claws (fig. 13, *e*) with 4 or 5 distinct teeth.

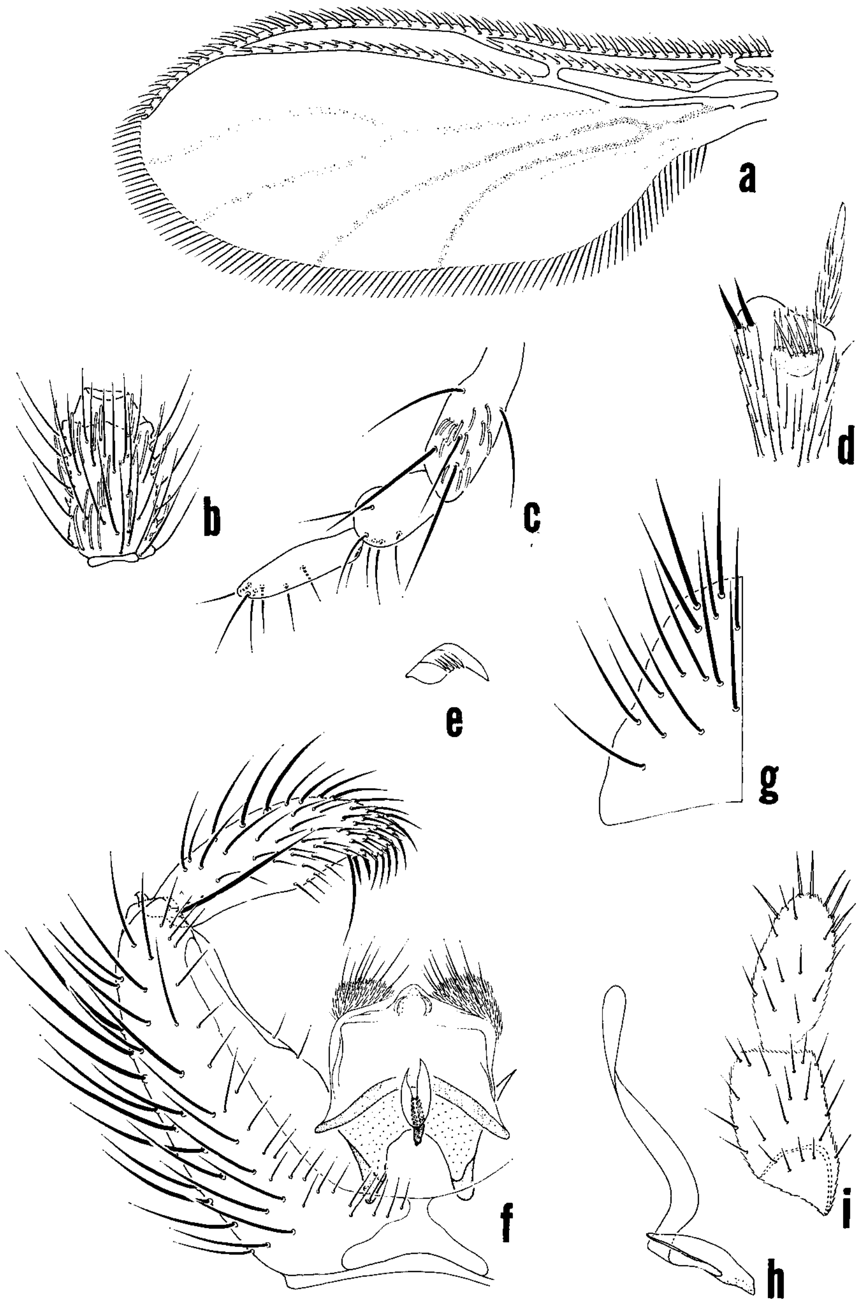


FIGURE 13. *Corynoptera ponapensis*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** tarsal claw; **f,** terminalia, ventral view; **g,** tergum IX. Female: **h,** vaginal furca; **i,** cercus.

Wing: (fig. 13, *a*); length 1.6–1.8 mm, width 0.6 mm. R-M index 1.5–1.9, C-M index 0.6–0.7. Costa, R_1, and R_5 with macrotrichia, other veins bare; r-m 0.7–0.9 × length of bM and Cu 0.5–0.6 × length of bM; stem of media evanescent. Haltere with 1 row of dorsal setae.

Abdomen: Tergal setae strong, sparse; sternal setae weaker. Sternum VIII bare. Terminalia as in fig. 13, *f*; tergum IX (fig. 13, *g*); tergum X bilobed. Basimeres narrowly joined ventrally without differentiated setae groups; mesoapical setae strong, about 3/4 length of distimere. Dorsal apodeme short and broad. Genital rod long and slender, apical fork indistinct. Tegmen as in fig. 13, *f*. Distimere elongate, oval, about 3 × longer than wide and 0.6 × length of basimere, apex blunt, densely covered with short setae, ventrally with 2 subapical mesad moderately stout setae and another very long slender seta proximad of above.

FEMALE. Similar to ♂. Flagellomere 4 slightly shorter than that of ♂ and flagellar hairs sparser. Wing length 2.1 mm, width 0.7 mm. Cercus as in fig. 13, *i*. Vaginal furca (fig. 13, *h*), stem moderately elongate, arms joining stem posteriorly.

Holotype, ♂ (US 70559), north slope, Kupwuriso Mt., (Kupuriso), Ponape I., 305–458 m, sweeping vegetation, Mar. 11, 1948, Dybas. Paratypes (US, BISHOP, FM, MCZ, CAS), all Ponape I.: 16 ♂♂, 4 ♀♀, same data as above; 3 ♂♂, summit, Kupwuriso Mt., 610 m, beating vegetation, Mar. 8, 1948, Dybas; 2 ♂♂, Nahnaland (Nanaland), ca. 305 m, beating vegetation, Mar. 18, 1948, Dybas; 7 ♂♂, Nanipil (Nanpil), Nett District, Feb. 1948, Dybas; ♂, between Nanipil and Mt. Pairot, Mar. 1948, Dybas; ♂, Temwetemwensekir Mt. (Tamatamansakir), 180 m, light trap, Jan. 1953, Gressitt; ♂, slope of Temwetemwensekir Mt., Mar. 1948, Dybas; 2 ♂♂, summit, Temwetemwensekir Mt., Mar. 1948, Dybas; ♂, Dolotomw Mt. (Tolotom), 640 m, Jun.-Sep. 1950, Adams.

MATERIAL EXAMINED: 32 ♂♂ and 4 ♀♀ on slides.

DISTRIBUTION: Caroline Is. (Ponape).

In Edwards (1928), this species comes out near *Phorodonta perpallida;* it differs in the structure of the tarsal claw (*P. perpallida* has 1 long tooth and *P. ponapensis* has several teeth). There are other differences, but, since the description is not adequate for detailed comparison, any further discussion is useless.

13. **Corynoptera sabroskyi** Steffan, n. sp. (fig. 14, *a-f*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge 2 facets wide at junction, 3 facets wide on next lateral row. Median ocellar bristles (3) well developed. Antenna: scape and pedicel subequal in diameter; scape with 1 strongly and 4 moderately developed median setae; pedicel with scattered weakly developed setae; flagellomere 4 (fig. 14, *b*) about 2 × longer than wide with short neck (0.20); flagellar hairs about 2/3 diameter of flagellomeres, hyaline sensillae long and narrow. Prefrons with central patch of 21 strong setae. Clypeus with 8 scattered setae. Labellum well developed. Palpus 3-segmented (fig. 14, *c*); segment 1 elongate with 3 dorsal setae and numerous basiconic sensillae; segment 2 about 2/3 length of 1 with 5 setae; segment 3 subequal in length to 1 but narrower, with 5 setae.

Thorax: Acrostichals poorly developed, restricted to anterior 1/4; dorsocentrals and

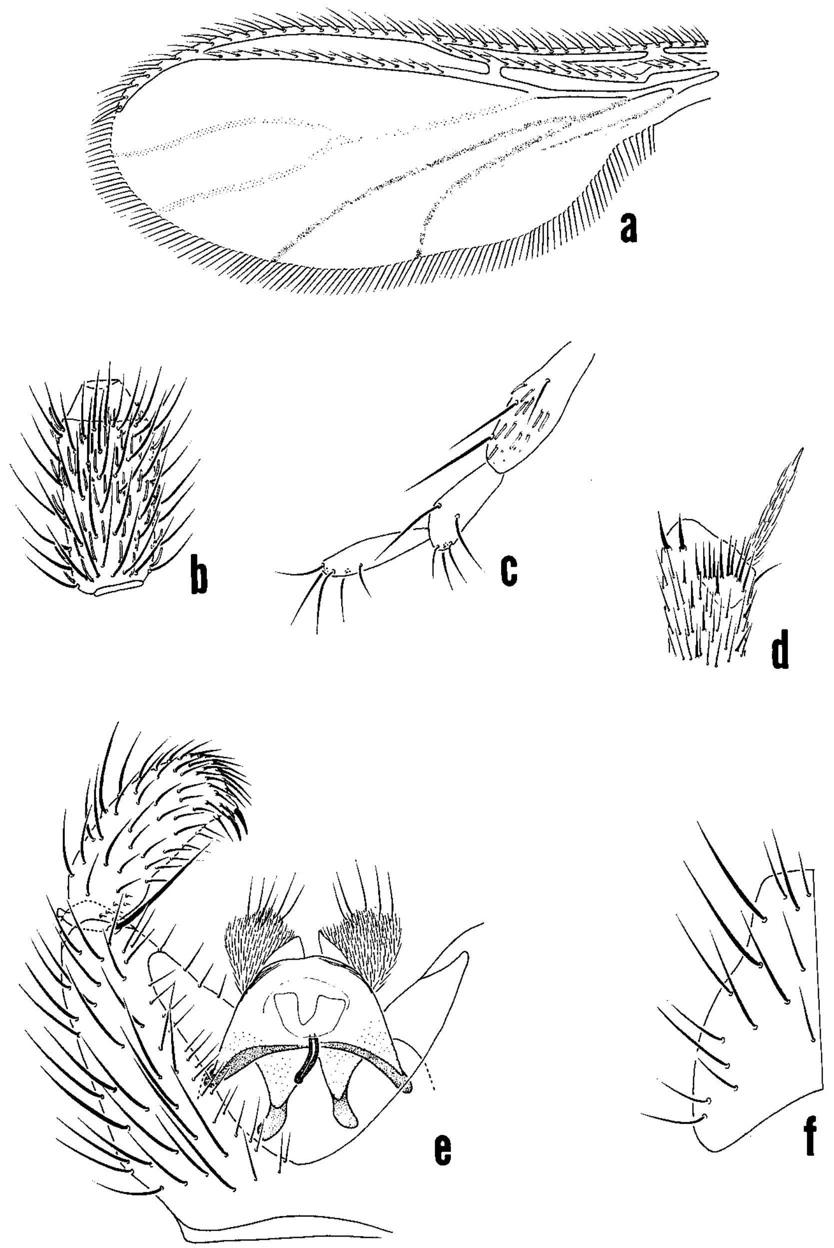


FIGURE 14. *Corynoptera sabroskyi*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX.

supraalars well developed. Scutellum with 6 strong posterior setae and several weaker laterals. Posterior pronotum bare; anterior pronotum with 3 strong posterior setae. Proepisternum with 10 strong scattered setae. Proepimeron well developed; posterior mesoepimeron normal, about 1.7 × longer than wide. Metanotal apodeme slightly swollen.

Legs: Fore-leg ratio 23:31:15:6; hind-leg ratio 31:46:18. Fore tibia without enlarged setae, fore tibial comb (fig. 14, *d*) with 10 to 12 enlarged setae set in a shallow pit. Mid tibia without enlarged setae. Hind tibia with enlarged posterodorsal setae along distal 2/3 and several enlarged dorsal setae; apex with 7 enlarged setae, spur length about 1.7 × diameter of tibial apex. Tarsal claws with 3 or 4 distinct teeth.

Wing: (fig. 14, *a*); length 1.7 mm, width 0.6 mm. R-M index 2.4, C-M index 0.7. Costa, R_1, and R_5 with macrotrichia, other veins bare; r-m 0.3 × length of bM; Cu 0.6 × length of bM; all veins distinct. Haltere with 1 to irregularly double row of dorsal setae.

Abdomen: Tergal and sternal setae strong; sternum VIII with 1 row of posterior setae. Terminalia as in fig. 14, *e*; tergum IX trapezoidal (fig. 14, *f*); tergum X bilobed. Basimeres narrowly joined ventrally without differentiated setal groups; mesoapical setae well developed, about 0.9 × length of distimere. Dorsal apodeme well developed and broad, extending about 1/2 way into genital cavity. Genital rod long and narrow, fork broad. Tegmen as in fig. 14, *e*. Distimere elongate, finger-like with 2 short strong mesoapical spurs.

FEMALE. Unknown.

Holotype, ♂ (US 70560), Airai, Ngerimal R., Babelthuap I., Palau Is., May 26, 1957, Sabrosky.

MATERIAL EXAMINED: ♂.

DISTRIBUTION: Caroline Is. (Palau).

14. **Corynoptera sylviae** Steffan, n. sp. (fig. 15, *a-i*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge 3 facets wide at junction, 4 facets wide in some places. Median ocellar bristles (2) well developed. Antenna: scape and pedicel subequal in diameter; scape with 1 strong and 2 weaker median transverse setae; pedicel with scattered shorter setae on distal 1/2; flagellomere 4 (fig. 15, *b*) about 2.5 × longer than wide, neck distinct (0.30); flagellar hairs slightly shorter or subequal to diameter of flagellomeres, set on tubercules, making sides of flagellomeres irregular; hyaline sensillae absent. Prefrons with large median patch of 18 setae. Clypeus with 5 setae on ventral 1/2. Labellum well developed. Palpus 3-segmented (fig. 15, *d*); segment 1 only slightly swollen apically with 4 dorsal and 1 ventral setae and several dorsal basiconic sensillae; segment 2 about 2/3 length of 1, with 9 setae; segment 3 elongate, narrow, subequal in length to 1, with 7 setae.

Thorax: Acrosticals poorly developed, restricted to anterior 1/4; dorsocentrals and supraalars well developed. Scutellum with 4 strong posterior bristles and 4 to 6 weaker lateral bristles. Posterior pronotum bare; anterior pronotum with 3 to 5 posterior setae. Proepisternum with 5 median setae. Proepimeron well developed; posterior mesoepimeron normal, 1.7 × longer than wide. Metanotal apodeme slightly swollen.

Legs: Fore-leg ratio 24:35:17:6; hind-leg ratio 35:48:20:6. Fore tibia without enlarged setae; fore tibial comb composed of a patch of 8 to 12 slightly enlarged setae set in a shallow pit (fig. 15, *e*). Mid tibia with several slightly enlarged posterodorsal setae along distal 1/2. Hind tibia with distinctly enlarged posterodorsal setae along median 1/2 and with slightly enlarged dorsal and anterior setae; apex with 8 enlarged setae; spurs about 1.6 × diameter of tibial apex. Tarsal claws toothed.

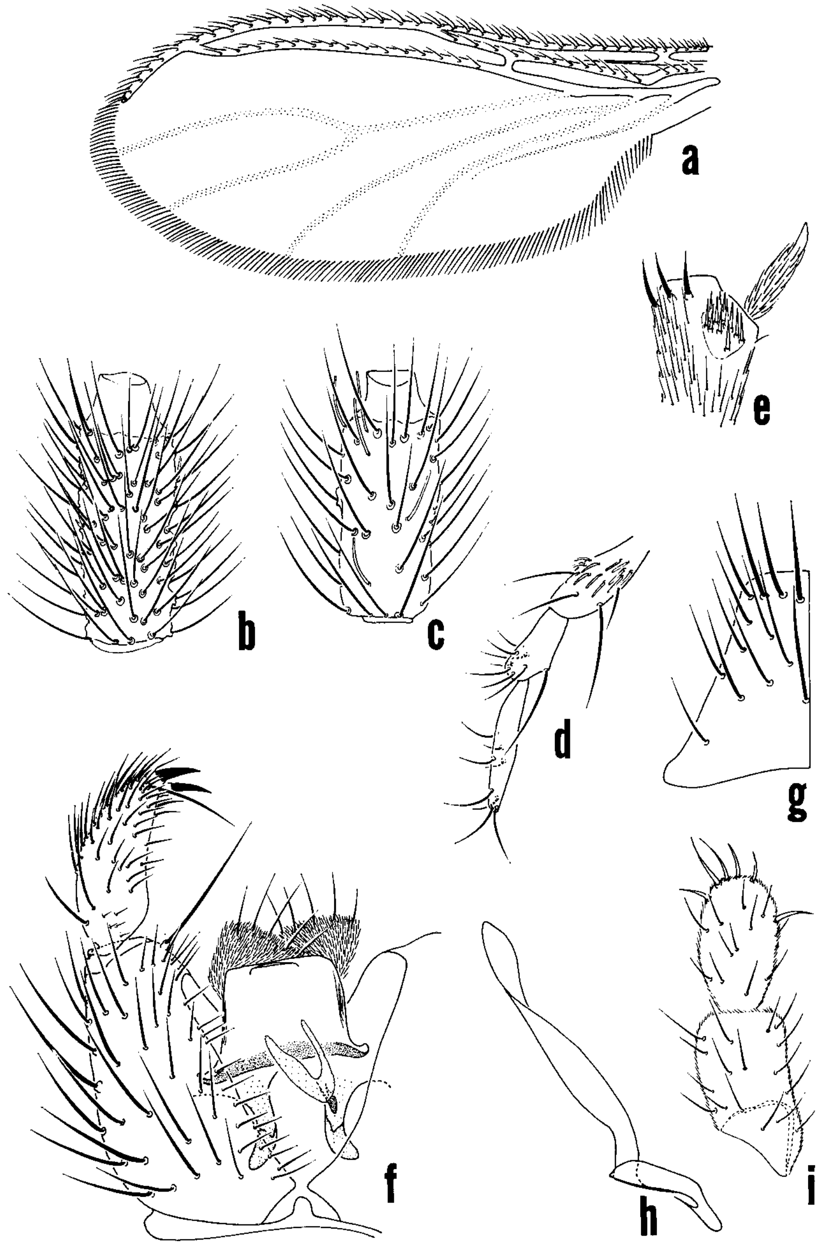


FIGURE 15. *Corynoptera sylviae*. **a,** wing, male; **b,** flagellomere 4, male; **c,** flagellomere 4, female; **d,** maxillary palpus, male; **e,** apex of fore tibia, male; **f,** terminalia, ventral view, male; **g,** tergum IX, male; **h,** vaginal furca, female; **i,** cercus, female.

Wing: (fig. 15, *a*); length 1.66 mm, width 0.64 mm. R-M index 1.9, C-M index 0.7. Costa, R_1, and R_5 with macrotrichia, other veins bare; r-m 0.9 × length of bM; Cu 0.6 × length of bM; M, M_1, and M_2 evanescent. Haltere with 1 dorsal row of setae.

Abdomen: Tergal setae strong; sternal setae slightly shorter. Sternum VIII with 1 row of posterior setae. Terminalia as in fig. 15, *f*; tergum IX trapezoidal (fig. 15, *g*); tergum X bilobed. Basimeres narrowly joined ventrally without differentiated setal groups; mesoapical setae well developed about 0.8 × length of distimere. Dorsal apodeme well developed, extending about 2/3 into genital cavity. Genital rod short with enlarged V-shaped fork; tegmen as in fig. 15, *f*. Distimere elongate, slightly compressed apically, with 1 enlarged apical and 1 enlarged mesoapical spur and 1 very long and slender mesoapical setae.

FEMALE. Similar to ♂. Flagellomere 4 (fig. 15, *c*) about 0.7 × length of that of ♂. Wing length 2.00 mm, width 0.80 mm, veins generally more distinct. Cercus as in fig. 15, *i*. Vaginal furca (fig. 15, *h*), stem elongate, slightly bent ventral anterior 1/3, arms joining stem posteriorly.

Holotype, ♂ (US 70561) and allotype, ♀, N.W. Ulebsehel (Auluptagel) I., Palau Is., 25 m, Dec. 13, 1952, light trap, Gressitt. Paratypes (BISHOP, US, FM), ♀, same data as holotype except Dec. 12, 1952; 3 ♀♀, same island, Sep. 1952, Krauss; ♀, same island, Jan. 1948, beating vegetation, Dybas; ♀, summit, Temwetemwensekir (Tamatamansakir) Mt., Ponape I., 479 m, Mar. 1949, Dybas; ♀, same locality, Jan. 18, 1952, 180 m, Gressitt; ♀, S.E. Nanpohnmal (Nanponmal), Jan. 1953, Berlese funnel, Gressitt; ♀, Dolotomw (Tolotom) Mt., Ponape I., Aug. 1950, Adams; 2 ♀♀, same data except Jun.-Sep. 1950; ♀, Nanpil, Nett Distr., Feb. 28, 1948, Dybas.

MATERIAL EXAMINED: ♂ and 13 ♀♀ on slides.

DISTRIBUTION: Caroline Is. (Palau and Ponape).

This species fits in the *Corynoptera longicornis* group of Tuomokoski (1960), but does not resemble any of the Finnish species. It also cannot be placed in Edwards' key (1928).

This species is named in honor of my wife, who did much of the tedious preliminary sorting.

Genus **Phytosciara** Frey

Phytosciara Frey, 1942, Notul. Ent. **22:** 27 (Type species: *Sciara halterata* Lengersdorf, by original designation); 1948, Notul. Ent. **27:** 46. —Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 103. —Steffan, 1966, Univ. Calif. Publ. Ent. **44:** 33.

Neosciara (*Prosciara*) Frey, 1942, Notul. Ent. **22:** 32 (Type species: *Sciara porrecta* Lengersdorf).

Bradysia (*Xenopygina*) Frey, 1948, Notul. Ent. **27:** 55 (Type species: *Bradysia paradoxa* Frey, by original designation).

Phytosciara (*Prosciara*) Frey, Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 104.

MALE. *Head:* Interfacetal hairs long and abundant; eye bridge 3 to 4 facets wide, occasionally slightly constricted at junction; flagellomere 4 about 2.5–3.0 × longer than wide, flagellar hairs generally shorter than diameter of joints; flagellar necks short but distinct. Palpus 3-segmented, segment 1 usually with 3 to 6 setae and without distinct sensory pit; segments 2 and 3 normal to slightly elongate. Clypeus with 2 to 4 setae. Labellum normal.

Thorax: Acrostichals moderately developed but generally restricted to anterior 1/2, dorsocentrals moderately developed. Posterior pronotum bare. Posterior mesoepimeron normal.

Legs: Tibial spurs 1:2:2; basitarsus of foreleg about 0.9 × length of fore femur (in some species, the basitarsus is slightly longer than the fore femur, Tuomikoski, 1960). Fore tibia with some distinctly enlarged median setae; fore tibial comb 1-rowed almost contiguous to tibial vestiture. Hind tibia usually with some enlarged posterior setae, spurs distinctly longer than diameter of tibial index. Tarsal claws with distinct teeth.

Wing: R-M index 1.4–1.8, C-M index 0.4–0.5. Costa, R_1, R_5, distal portion of r-m, M_1, M_2, distal portion of M, Cu_1, and Cu_2 with macrotrichia [in *Phytosciara* (*Prosciara*) the posterior wing veins are bare]; medial fork symmetrical. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae strong; sternum VIII with 3 rows of posterior setae. Tergum X bilobed. Distimere generally longer than wide, apex without distinct spur, preapical setae long and slender. Genital rod usually short.

FEMALE. Similar to ♂; in *Phytosciara* Frey *sensu strictu* and in *P.* (*Dolichosciara*) the abdomen of the ♀ is usually very plump and short and the cercus is very short.

Frey (1942) proposed this genus for species possessing the following characters: a) generally resembling *Phorodonta* (*sensu* Frey); b) posterior veins partially bristled, only M_{2a} ($= M_1$) with macrotrichia; c) Cu about 1.5 × length of bM; d) C-M index slightly greater than 0.5. Tuomikoski (1960) broadened the limits of this genus to include *Phorodonta* Coquillett, *sensu* Frey (1942, 1948) and *Neosciara* (*Prosciara*) Frey (1942). He proposed the following subgenera: *Phytosciara* Frey, *Dolichosciara* Tuomikoski, and *Prosciara* Frey. The type of his subgenus *Dolichosciara*, *Sciara flavipes* Meigen, was usually considered the only European species of *Phorodonta* Coquillett; however, he stated that *Phorodonta* was distinctly different from *Phytosciara.* Steffan (1966) did not treat *Phorodonta* in his generic revision of North American Sciaridae since specimens of this taxon were unavailable. I have examined species of *Phorodonta niger* (Wiedemann) and agree with Tuomikoski that, in spite of the common character of toothed claws, this species does not belong in the same genus as *P. flavipes* Meigen. Since so many authors, including Edwards, have used the toothed claws as a key characteristic for separating *Phorodonta,* this genus, although absent in Micronesia, is included in the key to genera.

There is apparently only 1 widespread species of *Phytosciara* in Micronesia. Many of the species described by Edwards from the Oriental Region and the Pacific area probably belong to *Phytosciara.*

Key to Subgenera of Phytosciara (Tuomikoski, 1960)

1. Palpus short, antennal segments smooth; dorsal protuberance of distimere barely differentiated; distimere with several subequal spinlets at and below apex.................. ....**Phytosciara** Frey, *s. str.*

   Palpus long; apex of distimere densely haired, with a bristled dorsal protuberance proximally 2

2. Surface of flagellomeres (especially apical joints) of ♂ sharply tuberculate, with very long hairs; dorsal protuberance of distimere low, not prominent, with 3 to 7 slender spines (not fused) ....**Dolichosciara** Tuomikoski

   Surface of flagellomeres of ♂ only slightly rough to almost smooth; dorsal protuberance of distimere prominent as distinct process, with 4 to 6 strong, closely set to fused spines ....**Prosciara** Frey

15. Phytosciara brachygaster Steffan, n. sp. (fig. 16, *a-j*)

Male. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide near junction, occasionally 4 facets wide above base of antenna. Median ocellar bristle well developed. Anterior vertex with 2 to 7 short dorsomedian setae. Antenna: scape subequal to slightly narrower than pedicel, but distinctly longer, with 3 or 4 median setae; pedicel with 3 to 5 distal setae; flagellomere 4 (fig. 16, *b*) about 2.5–3.0 × longer than wide with distinctly set-off neck about 0.20 × length of flagellomere; proximal 1/2 of neck generally pale, distal 1/2 dark; flagellar hairs equal to or slightly shorter than width; apical segments narrow. Prefrons with numerous (28–45) strong scattered setae. Clypeus with 2 to 4 dorsomedian setae. Palpus 3-segmented (fig. 16, *d*), segment 1 club-shaped, swollen distally, with 5 or 6 dorsolateral setae and with numerous dorsal basiconic sensillae; segment 2 slightly shorter than 1, with 15 setae on distal 1/2; segment 3 elongate, 1.3 × longer than 1, with 12 scattered setae on distal 1/2.

Thorax: Acrostichals restricted to anterior 1/2 or less of notum; dorsocentrals moderately developed, less than 1/2 as long as longest supraalar. Scutellum with 5 strong median setae and 4 weaker laterals. Posterior pronotum bare; anterior pronotum with 10 scattered posterior setae. Proepisternum with 11 scattered setae subequal to *apn* setae. Proepimeron sharply triangular; posterior mesoepimeron normal, about 1.5 × longer than wide. Metanotal apodeme slightly inflated distally.

Legs: Fore-leg ratio 51:70:45:18 (range of tibial length 66–75); hind-leg ratio 59:88:44:14 (range of tibial length 84–94). Fore tibia with distinctly enlarged (at least 2 × diameter of undifferentiated setae) posterior setae and with 3 postmedial dorsal setae; fore tibial comb (fig. 16, *e*) with 10 enlarged setae scarcely separated from tibial vestiture; fore coxa with numerous longitudinal rows of ventral setae on anterior 1/2. Mid tibia with posterior and dorsal differentiated setae. Hind tibia with anterodorsal, posterodorsal, dorsal, and ventral enlarged setae; apex of tibia with 10 enlarged setae; tibial spurs about 2 × diameter of tibial apex. Tarsal claws (fig. 16, *f*) with distinct strong teeth.

Wing: (fig. 16, *a*); length 2.8–3.1 mm, width 1.0–1.2 mm. R-M index 1.4–1.8; C-M index 0.4–0.5. Costa, R_1, R_5, distal portion of r-m, M_1, M_2, distal portion of M, Cu_1, and Cu_2 with macrotrichia; r-m 1.5–2.8 × length of bM and Cu 0.9–1.7 × length of bM; anal vein distinct; proximal 1/2 of M evanescent. Haltere with 1 row of dorsal and ventral setae.

Abdomen: Tergal setae strong, sternal setae slightly smaller. sternum VIII with 3 rows of posterior setae and 6 lateral setae. Terminalia as in fig. 16, *g*; tergum IX as in fig. 16, *h*, emarginate posteriorly; tergum X bilobed. Basimeres ventrally narrowly joined without median setae. Mesoapical setae slightly less than 1/2 length of distimere; dorsal posterior ridge with

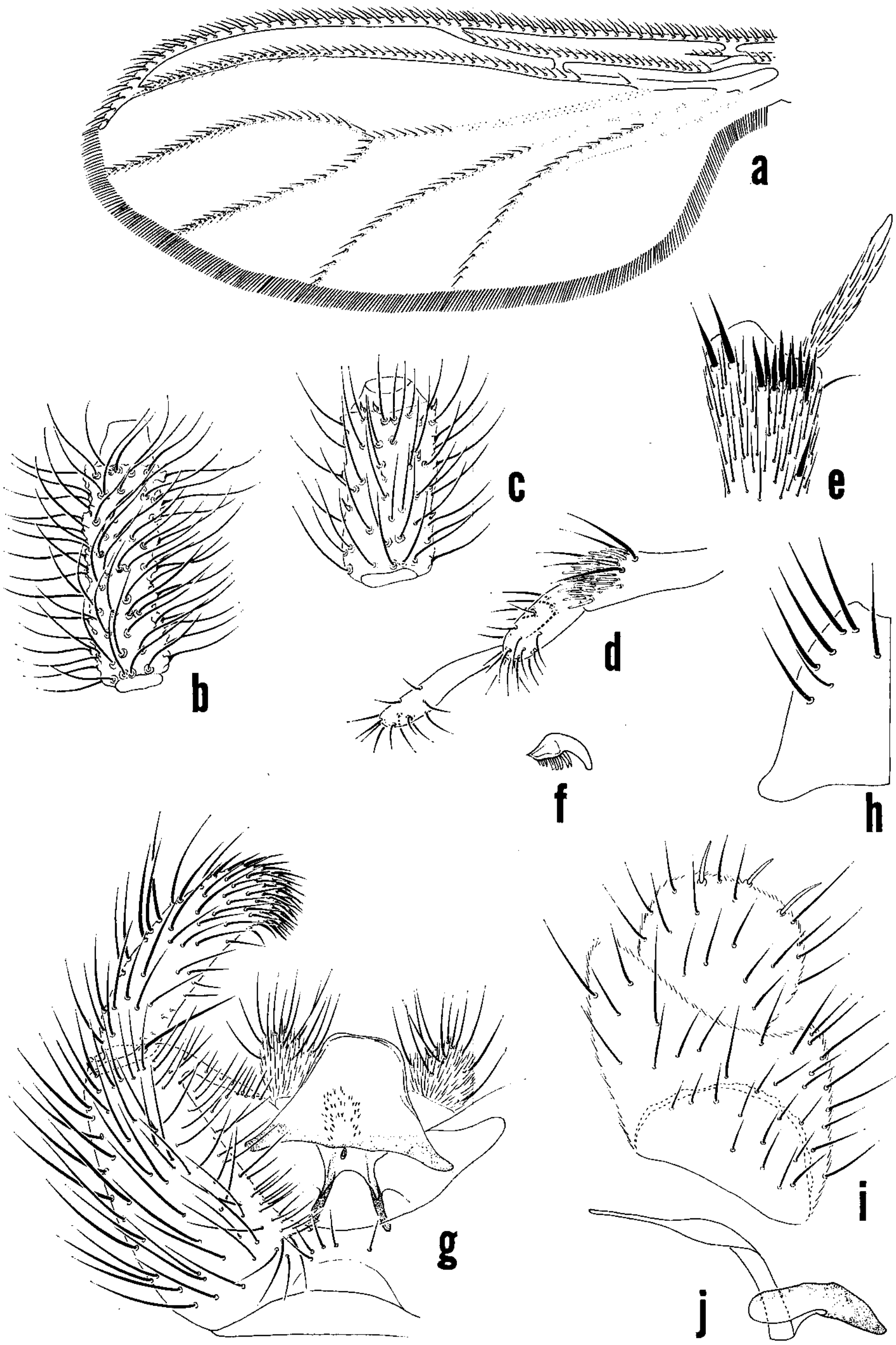


FIGURE 16. *Phytosciara brachygaster*. **a,** wing, male; **b,** flagellomere 4, male; **c,** flagellomere 4, female; **d,** maxillary palpus, male; **e,** apex of fore tibia, male; **f,** tarsal claw, male; **g,** terminalia, ventral view, male; **h,** tergum IX, male; **i,** cercus, female; **j,** vaginal furca, female.

patch of 10 or more short setae. Dorsal apodeme narrow, extending less than 1/2 way into genital cavity. Genital rod very short; tergum as in fig. 16, *g*. Distimere elongate, blunt apically with apical cap of short dense setae; other setae of distimere usually very long; mesally with 3 or 4 moderately long preapical setae.

FEMALE. Similar to ♂. Flagellomere 4 (fig. 16, *c*) about 2/3 as long as that of ♂—apical segments proportionately thicker. Cercus as in fig. 16, *i*, very short. Vaginal furca (fig. 16, *j*) flattened dorsoventrally, arms arise posteriorly.

Holotype, ♂ (US 70562), Airai, Ngerimal R., Babelthuap, Palau Is., May 26, 1957, sweeping tree-fern ravine, Sabrosky. Allotype, ♀, same data. Paratypes (US, BISHOP, FM CAS): 42 ♂♂, 13 ♀♀, same data as holotype; 4 ♂♂, 8 ♀♀, Imeliik, Netkeng, Jun. 5, 6, 1957, Sabrosky; ♀, Iwang, Dec. 19, 1952, Gressitt; ♂, Ngaremeskang, Dec. 21, 1952, 30 m, Gressitt; 11 ♀♀, Ngaremlengui, Jun. 2, 3, 1957, Sabrosky; 2 ♂♂, ♀, E. Ngatpang, Dec. 10, 1952, 65 m, Gressitt; ♂, Ngiwal, May 19, 1957, Sabrosky; 2 ♂♂, 2 ♀♀, wooded valley S.W. Ulimang, Dec. 19, 20, 1947, beating vegetation, Dybas. KOROR: ♂, Apr. 1965, at light, Beardsley; ♂, May 1957, sweeping grasses, Sabrosky. MALAKAL: 2 ♂♂, May 2, 1957, Sabrosky. NGARMALK (Auluptagal, N.W.): ♀, Beardsley (no date); ♂, ♀, Sep. 1952, Krauss; 2 ♂♂, 2 ♀♀, Dec. 13, 1952, 25 m, Gressitt. ULEBSEHEL (Aurapushekaru): 4 ♀♀, Jan. 13, 14, 1948, beating vegetation, Dybas.

PONAPE. Kolonia (Colonia): ♀, Agriculture Experiment Station, Jan. 6, 1953, light trap, Gressitt; ♀, Jan. 17, 1953, Clarke; ♂, 6 ♀♀, Nanipil (Nanpil), Nett Distr., Feb. 25, 1948, Dybas; ♀, between Nanipil (Nanpil) and Pairot Mt., Mar. 14, 1948, Dybas; 2 ♀♀, Temwetemwensekir Mt. (Tamatamansakir), Jan. 16, 1953, 180 m, Gressitt; ♀, same locality, on slope between 165–500 m, Mar. 23, 1948, Dybas.

MATERIAL EXAMINED: 61 ♂♂ and 56 ♀♀ on slides.

DISTRIBUTION: Caroline Is. (Palau, Ponape).

Phytosciara brachygaster may be the same as *Phorodonta pacifica* Edwards (1924b) from Fiji; however, I am treating it as a new species until the types of *P. pacifica* and other Oriental *Phorodonta* can be examined.

Genus **Ctenosciara** Tuomikoski

Ctenosciara Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 110 (Type species: *Sciara hyalipennis* Meigen 1804, by original designation).

MALE. *Head:* Interfacetal hairs long and abundant; eye bridge broadly joined, 3 to 5 facets wide; flagellomere 4 about 2.5 × longer than wide, with short distinct neck; flagellar hairs shorter than diameter of joints. Palpus 3-segmented, segment 1 with 2 dorsolateral setae; segments 2 and 3 elongate. Clypeus bare. Labellum well developed.

Thorax: Acrostichals moderately developed; dorsocentrals well developed. Posterior pronotum bare. Posterior mesoepimeron normal.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg 0.8 × length of fore femur. Fore tibia with or without a few enlarged median setae; apex of fore tibia with 1-rowed comb proximally separated from tibial vestiture by distinct bare area. Hind tibia with enlarged posterodorsal setae; spurs longer than diameter of tibial apex. Tarsal claws with large submedian tooth.

Wing: R-M index 1.5–2.0, C-M index about 0.6. Costa, R_1, R_5, distal portion of r-m, distal 1/2 of M_1, M_2 and distal 1/2 of Cu, with macrotrichia; medial fork symmetrical. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae well developed; sternum VIII with small, scattered, median setae. Tergum X bilobed. Distimere elongate, generally with at least 1 enlarged apical or meso-apical seta, mesal surface straight, not deeply concave. Genital rod elongate, with broad distal fork.

FEMALE. Similar to ♂. Vaginal furca slightly inflated posteriorly, arms join stem near posterior 1/3.

Tuomikoski (1960) proposed this genus for *Sciara hyalipennis* Meigen (for synonyms of this species, see Tuomikoski, 1960: 110). He states that, in spite of the presence of macrotrichia on the posterior wing veins, this taxon is more closely related to *Bradysia* and *Scatopsciara* than to *Trichosia* or *Sciara*. It shares with *Bradysia* and *Scatopsciara* the 1-rowed tibial comb separated from tibial vestiture by a bare area, 1st segment of palpus with 2 setae and occasionally with a distinct sensory pit, bare post-pronotum, halteres with only 1 row of dorsal setae, similar wing veins and similar male terminalia. It differs from *Bradysia* and *Scatopsciara* primarily in the presence of macrotrichia on the posterior wing veins.

In addition to *C. hyalipennis*, which Tuomikoski included in this genus, *Sciara hawaiiensis* Hardy and *C. multispinosa* also belong to this taxon. The latter species is the only one found in Micronesia. This disjunct distribution—northern Europe, Hawaiian Islands, and Micronesia—certainly indicates that other species in this group should be found as the fauna in other areas is studied more thoroughly.

16. **Ctenosciara multispinosa** Steffan, n. sp. (fig. 17, *a-j*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge 3 facets wide at junction, next vertical row laterad 5 facets wide, usually 4 to 5 facets wide. Median ocellar bristles (2) well developed. Antenna: scape and pedicel subequal in diameter; scape with 4 strong median setae; pedicel with scattered moderately developed setae on distal 1/2; flagellomere 4 (fig. 17, *b*) about 2.4 × longer than wide, neck short (0.20), flagellar hairs about 0.75 × diameter of flagellomere, dense and spreading; flagellomere 10 slightly shorter than 4. Prefrons with 4 large ventral and 8 scattered median setae. Clypeus bare. Labellum well developed. Palpus 3-segmented (fig. 17, *c*), segment 1 swollen apically, with 2 dorsolateral setae; segment 2 about 0.7 × length of 1, with 9 setae; segment 3 narrow and elongate, about 1.3 × longer than 1, with 10 setae.

Thorax: Acrosticals moderately developed to posterior 1/2; dorsocentrals well developed, largest subequal to largest supraalars. Scutellum with 3 very strong posterior, 5 or 6 weak lateral and row of weak anterior setae. Posterior pronotum bare; anterior pronotum with 1 very strong ventroposterior seta and 3 weaker posterior setae. Proepisternum with 3 moderate

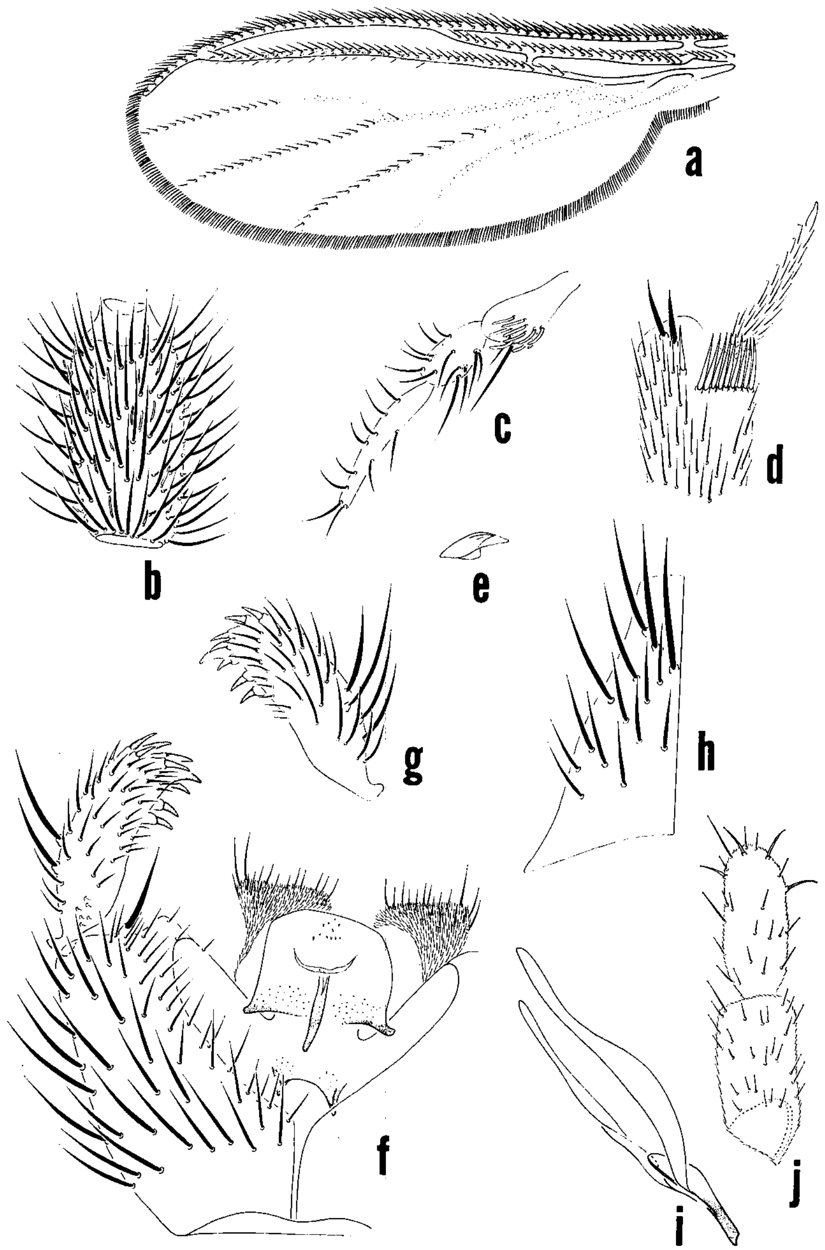


FIGURE 17. *Ctenosciara multispinosa*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** tarsal claw; **f,** terminalia, ventral view; **g,** distimere, dorsal view; **h,** tergum IX. Female: **i,** vaginal furca, lateral view; **j,** cercus.

upper and 1 or 2 moderate lower setae. Proepimeron well developed. Posterior and anterior pronotum, proepisternum, and proepimeron pale, other pleural sclerites dark. Posterior mesoepimeron normal, about 1.6 × longer than wide. Metanotal apodeme elongate and narrow.

Legs: Fore-leg ratio 27:40:21:9; hind-leg ratio 37:56:25:9. Fore tibia with 1 to 2 enlarged posterodorsal setae; fore tibial comb (fig. 17, *d*) composed of 8 enlarged unilateral setae proximally separated by triangular bare area from tibial vestiture. Mid tibia without distinctly enlarged setae. Hind tibia with enlarged posterodorsals along distal 2/3 and with scattered enlarged anterior setae; apex with 10 enlarged setae; spurs about 1.8 × diameter of tibial apex. Tarsal claws with large, short submedian tooth (fig. 17, *e*).

Wing: (fig. 17, *a*); length 1.9 mm, width 0.6 mm. R-M index 1.7; C-M index 0.6. Costa, R_1, R_5, distal portion of r-m, distal 1/2 of M_1, M_2, and distal 1/2 of Cu with macrotrichia; M evanescent. Haltere with 1 dorsal row of setae.

Abdomen: Tergal setae strong, sternal setae slightly shorter; sternum VIII with very small, scattered median setae. Terminalia as in fig. 17, *f*; tergum IX trapezoidal (fig. 17, *h*); tergum X bilobed. Basimeres broadly joined ventrally, mesoapical setae about 2/3 length of distimere. Dorsal apodeme very short and weakly developed, extending about 1/3 into genital cavity. Genital rod long and narrow, fork broad basally. Tegmen as in fig. 17, *f*. Distimere elongate, finger-like, with 1 large mesoapical spur, 5 smaller apicals and 3 smaller subapicals (fig. 17, *g*).

FEMALE. Similar to ♂. Flagellomeres missing. Cercus elongate (fig. 17, *j*). Vaginal furca (fig. 17, *i*) narrow anteriorly, slightly inflated posteriorly, arms join stem near posterior 1/3.

Holotype, ♂ (BISHOP 8225), Temwetemwensekir Mt. (Tamatamansakir), 180 m, Ponape, Jan. 17, 1953, Gressitt; allotype, ♀, same data except Jan. 16, 1953.

MATERIAL EXAMINED: ♂ and ♀.

DISTRIBUTION: Caroline Is. (Ponape).

Ctenosciara multispinosa differs from other *Ctenosciara* in the structure of the distimere. Its closest relative is *C. hawaiiensis* (Hardy) from the Hawaiian Islands, which has only 3 apical-subapical spines on the distimere. The female of *C. multispinosa* also differs from *C. hawaiiensis* in possessing a longer cercas and in the shape of the stem of the vaginal furca, which is narrower in *multispinosa*.

Genus **Bradysia** Winnertz

Bradysia Winnertz, 1867, Zool. Bot. Gesellsch. Wien **1867:** 106 (Type species: *B. angustipennis* Winnertz, by subsequent designation, Enderlein, 1911, Arch. f. Naturgesch. **77:** 127). —Frey, 1942, Notul. Ent. **22:** 38; 1948, Notul. Ent. **27:** 49. —Tuomikoski, 1960, Ann. Zool. Soc. 'Vanamo **21:** 110. —Steffan, 1966, Univ. Calif. Publ. Ent. **44:** 34.

Neosciara Pettey, 1918, Ann. Ent. Soc. Amer. **11:** 32 (Type species: *Sciara corprophila* Lintner, by original designation).

MALE. *Head:* Interfacetal hairs long and abundant; eye bridge broadly joined, 3 facets wide; flagellomere 4 at least 1.5 × longer than wide, usually longer, flagellar hairs usually shorter than diameter of flagellomeres, flagellar neck short (usually about 0.1–0.2 × length of joint) but distinct. Palpus 3-segmented, segment 1 usually with 2 or more dorsal setae, oc-

casionally with 1, and with sensillae on dorsal surface or distinctly set in a pit; segments 2 and 3 normal. Clypeus bare or with 1 or 2 median setae. Labellum well developed.

Thorax: Acrostichals poorly to moderately developed, dorsocentrals usually well developed. Posterior pronotum bare. Posterior epimeron of mesothorax normal.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg 0.6–0.7 × length of fore femur. Fore tibia without enlarged median setae and with 1-rowed tibial comb separated proximally from tibial vestiture by distinct bare area. Hind tibia usually with some enlarged posterodorsal spines, spurs longer than diameter of tibial apex. Tarsal claws usually simple, rarely toothed.

Wing: R-M index 1.5 or more, C-M index 0.6–0.8. Costa, R_1, R_5 and occasionally r-m with macrotrichia; other veins bare. Medial fork symmetrical. Haltere with 1 row of dorsal setae.

Abdomen: Abdominal setae generally strong; sternum VIII usually with 1 row of posterior setae. Tergum X bilobed. Distimeres usually longer than wide, mesal surface simple and usually straight to slightly concave. Genital rod usually elongate, with broad distal fork.

FEMALE. Similar to ♂. Vaginal furca generally flattened dorsoventrally.

Following the concepts of Frey (1948) and Tuomikoski (1960), *Bradysia* is the largest genus in the Northern Hemisphere. Many of the species described in *Sciara* by earlier authors probably belong to *Bradysia*. Tuomikoski (1960) placed the Finnish species in 7 species groups. Some of these probably could be considered subgenera; however, this genus needs to be studied on a worldwide basis before it can be subdivided.

Many species of *Bradysia* are common in greenhouses and mushroom houses, and around potted plants in the home. Under certain conditions, some of these species can cause economic damage in greenhouses and commercial mushroom beds. Several species probably have been widely distributed by man; *Bradysia tritici*, for example, apparently is cosmopolitan (see the discussion under *tritici*).

KEY TO MICRONESIAN SPECIES OF BRADYSIA

1. First palpal segment with 1 to 3 setae; prefrons usually with 2 strong ventral and 7 to 18 weaker median setae, R-M index usually greater than 2.0 2

   First palpal segment with 4 or more setae; prefrons with 3 or more strong ventral and 19–30 weaker median setae, R-M index less than 2.0; distimere slightly constricted apically, with 1 stout apical and 3 or 4 stout mesoapical spines .... **17. boninensis**

2. First palpal segment with 2 or 3 dorsal setae; flagellar hairs generally weak 3

   First palpal segment with 1 dorsal seta; flagellar hairs generally well developed 4

3. First palpal segment with distinct sensory pit; pleurae with pale band across dorsal margin of katepisternum; hind tibia with posterodorsal spines subequal in length to tibial diameter; distimere with 1 stout apical, 2 mesoapical and 2 preapical, ventral dorsal spines .... **21. tritici**

   First palpal segment without sensory pit; pleurae generally equally pigmented; hind tibia with very long posterodorsal spines, about 1.5 × diameter of tibia; distimere with 5 or 6 stout apical, mesoapical spines; apical spine occasionally appears separated from mesoapical spines .... **19. radicum**

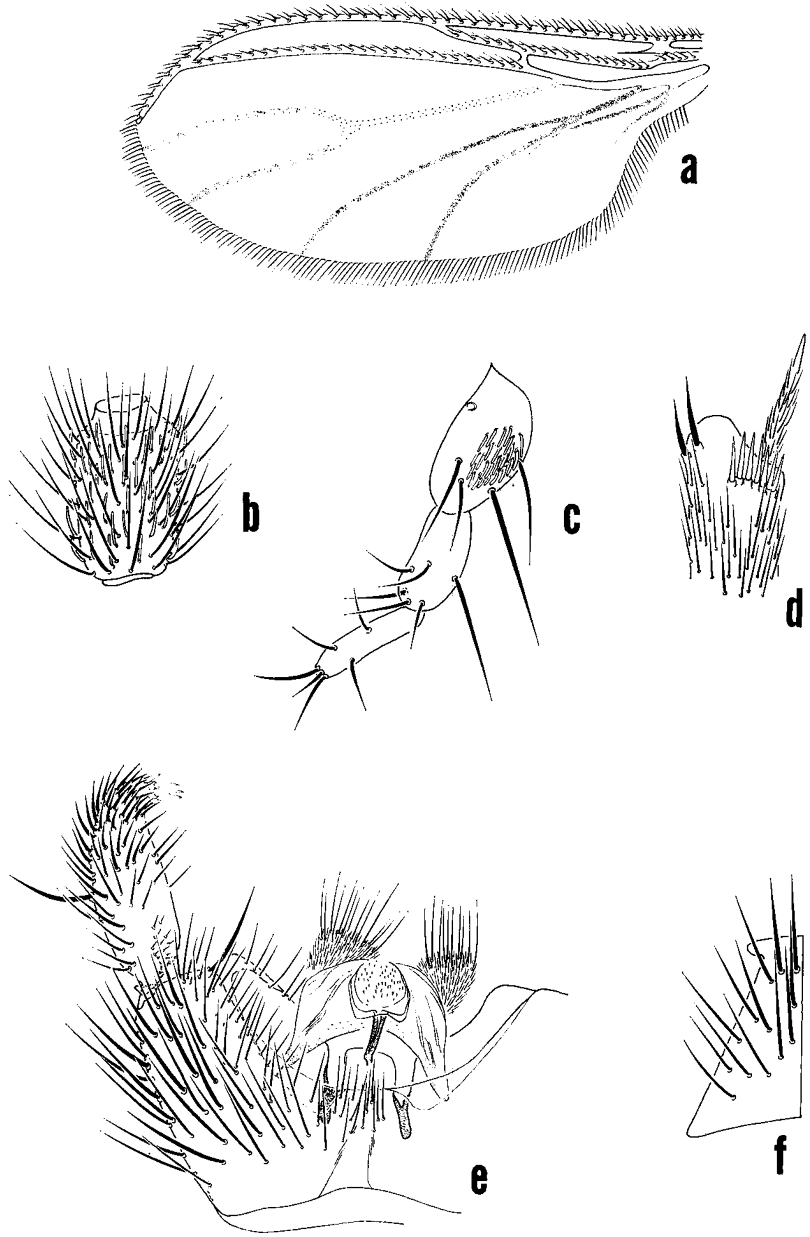


FIGURE 18. *Bradysia boninensis*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX.

4. First palpal segment with shallow sensory pit well marked proximally; distimere ovoid, less than 2.0 × longer than wide, with 4 stout mesoapical spines and a few smaller apical and preapical setae...**20. snyderi**
   First palpal segment without distinct sensory pit, occasionally with indefinite proximal line behind basiconic sensillae; distimere about 2.5 × longer than wide, with 4 stout apical-mesoapical spines and numerous smaller apical and preapical setae...... ....**18. kraussi**

17. **Bradysia boninensis** Steffan, n. sp. (fig. 18, *a-f*)

MALE. *Head:* Interfacetal hairs abundant, extending slightly beyond outer curvature of facets; eye bridge broadly joined, 2 to 3 facets wide at junction, 3 facets wide above antennal sockets, dorsal row irregular. Median ocellar bristle moderately developed. Antenna: scape somewhat reduced; setae of scape and pedicel subequal, those of pedicel scattered; flagellomere 4 (fig. 18, *b*) about 1.7 × longer than wide with short neck (0.20), flagellar hairs strong, about 0.6 × diameter of segment. Prefrons with 3 strong ventral and 19 to 30 scattered weaker setae. Clypeus with 1 median seta. Palpus 3-segmented (fig. 18, *c*); segment 1 slightly swollen medially with 4 or 5 dorsal setae and numerous small basiconic sensillae; segment 2 about 0.6 × length of 1 with 6 setae; segment 3 elongate, subequal in length to 1 but narrower, with 6 setae.

Thorax: Acrostichals weak and dorsocentrals moderately to weakly developed. Scutellum with 5 strong setae. Posterior pronotum bare. Anterior pronotum with 7 scattered setae and proepisternum with 10 scattered setae of equal length. Proepimeron well developed; posterior epimeron of mesothorax about 1.6 × longer than wide. Metanotal apodeme slightly swollen preapically.

Legs: Fore-leg ratio 26:27:14:6 (range of tibial length 25–27, 2 specimens); hind-leg ratio: 31:38:30:7 (range of tibial length 38–40). Setae of fore tibia largely subequal; some posterodorsal setae of mid tibia differentiated from general tibial vestiture; posterodorsal setae along distal 1/2 of hind tibia distinctly thicker than other setae, but subequal in length. Fore tibial comb (fig. 18, *d*) 1-rowed with 7 differentiated setae separated from tibial vestiture by bare area. Apex of hind tibia with 12 differentiated setae; spurs slightly longer than diameter of tibial apex. Tarsal claws with distinct teeth.

Wing: (fig. 18, *a*); length 1.7–1.8 mm; width 0.6–0.7 mm. R-M index 1.6–1.9, C-M index 0.70. Costa, R_1, R_5, and distal portion of r-m with macrotrichia, r-m 0.3–0.5 × length of bM and Cu 0.6–0.8 × length of bM; M evanescent. Haltere knob with 1 row of dorsal setae.

Abdomen: Tergal setae well developed but smaller than largest supraalars, sternal setae slightly smaller. Sternum VIII with 3 or 4 setae on distal corners. Terminalia as in fig. 18, *e*; tergum IX as in fig. 18, *f* with row of 7 differentiated posterior setae and about 20 weaker setae; tergum X bilobed. Basimeres ventrally broadly joined, without differentiated ventral setal groups; mesoapical seta about 1/2 length of distimere. Dorsal apodeme slender, inflated posterior 1/2, extending slightly more than 1/2 way into genital cavity. Genital rod long and slender, broadly forked apically. Tegmen as in fig. 18, *e*. Distimere slightly narrowed apically with 1 stout apical and 3 or 4 stout mesoapical spines.

FEMALE. Unknown.

Holotype, ♂ (US 70563), Omura "Camp Beach," Chichi Jima, Bonin Is., May 5-Jun. 9, 1958, Snyder; paratype (BISHOP), ♂, same data.

MATERIAL EXAMINED: 2 ♂♂ on slides.

DISTRIBUTION: Bonin Is.

This species keys out near *Phorodonta perpallida* Edwards in Edwards (1928); however, only the female of *perpallida* was described (Edwards, 1925) and critical comparison is impossible. Edwards mentioned that the pale uniform color (possibly an artifact of preservation in alcohol) is striking and this does not agree with *boninensis*. *B. boninensis* is similar, but not identical, to *Sciara molokaiensis* Grimshaw from Hawaii in the shape of the distimere.

18. Bradysia kraussi Steffan, n. sp. (fig. 19, *a-e*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond curvature of facets; eye bridge broadly joined, mostly 3 facets wide, dorsal row irregular. Median ocellar bristle well developed. Antenna: scape somewhat reduced with 1 long and several shorter setae; pedicel

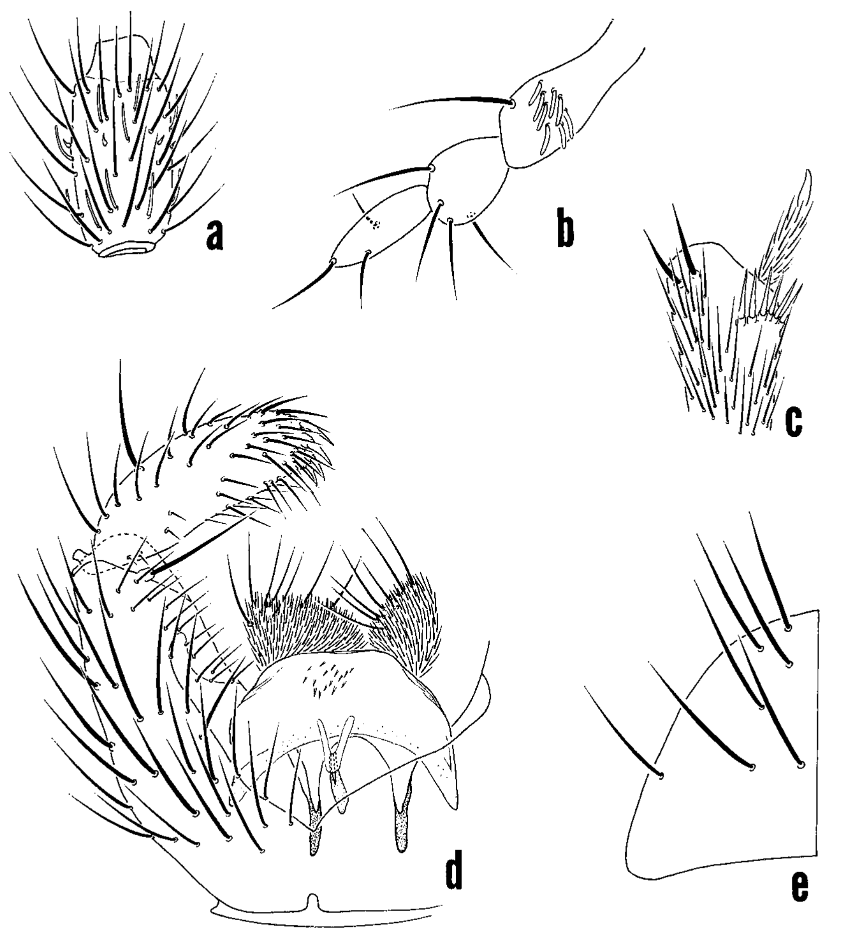


FIGURE 19. *Bradysia kraussi*. Male: **a,** flagellomere 3; **b,** maxillary palpus; **c,** apex of fore tibia; **d,** terminalia; **e,** tergum IX.

with several scattered shorter setae; flagellomere 3 (fig. 19, *a*)* about 2.0 × longer than wide, with short, distinct neck; flagellar hairs shorter than diameter of flagellomeres. Prefrons with 2 long ventral setae and 8 shorter median setae. Clypeus with 1 medial seta. Palpus 3-segmented (fig. 19, *b*), segment 1 slightly swollen distal 1/2 with 1 dorsal seta and 7 to 9 dorsal basiconic sensillae; segment 2 shorter with 4 or 5 setae; segment 3 slightly elongated with 3 setae.

Thorax: Acrostichals weak, restricted to anterior 1/2; dorsocentrals moderately developed. Posterior pronotum bare; anterior pronotum 2 or 3 posterior setae. Proepisternum with 4 posterior setae subequal to *apn* setae. Proepimeron well developed; posterior mesoepimeron short, about as long as wide. Metanotal apodeme short and slightly swollen.

Legs: Fore-leg ratio 15:17:10:-; hind-leg ratio 19:27:12:4. Setae of fore and mid tibiae subequal; posterodorsal setae of distal 2/3 of hind tibia enlarged, about as long as diameter of tibia. Fore tibial comb (fig. 19, *c*) 1-rowed, with 6 or 7 setae distinctly separated from general tibial vestiture by proximal bare area. Apex of hind tibia with 9 differentiated setae. Tarsal claws with small basal teeth.

Wing: Missing in holotype.

Abdomen: Tergal setae well developed, sternal setae slightly smaller. Sternum VIII with 2 posterior setae on each corner and 1 median posterior seta. Terminalia as in fig. 19, *d*; tergum VIII as in fig. 19, *e*. Basimeres broadly joined ventrally without distinct median setal groups. Mesoapical setae clearly differentiated from nearby setae and about 1/2 length of distimere. Dorsal apodeme slender, flattened proximal 1/2 or 2/3, extending 1/2 way into genital cavity. Tegmen (fig. 19, *d*), is somewhat distorted in holotype. Genital rod short (distorted in holotype). Distimere as in fig. 19, *d*, about 0.7 × length of basimere and about 2.25 × longer than wide, with 4 subequal stout spines along apicomesal margin.

FEMALE. Unknown.

Holotype, ♂ (US 70564), Talofofo, Guam, S. Mariana Is., Aug. 1952, Krauss.

MATERIAL EXAMINED: ♂ on slide.

DISTRIBUTION: S. Mariana Is. (Guam).

19. Bradysia radicum (Brunetti) **NEW COMBINATION** (fig. 20, *a-g*)

Sciara radicum Brunetti, 1912, Diptera Nematocera, Fauna British India. p. 139–40; 1920, Rec. Ind. Mus. **17:** 21. —Edwards, 1928, J. Fed. Malay States Mus. **14:** 22; 1928, Insects of Samoa **2:** 33; 1935, Bishop Mus. Bull. **114:** 85; 1945, Checklist of Brit. Inst. p. 350. —Hardy, 1956, Proc. Haw. Ent. Soc. **15**(1): 85; 1960, IN Zimmerman, Insects of Hawaii **10:** 227.

MALE. *Head:* Interfacetal hairs abundant, extending well beyond curvature of facets; eye bridge broadly joined, 3 facets wide at junction. Median ocellar bristle well developed. Antenna: scape with 1 median transverse row of strong setae; pedicel with 2 transverse rows of strong setae on distal 1/2; flagellomere 4 (fig. 20, *b*) about 1.8–2.3 × as long as wide with short, wide neck (about 0.2 × length); flagellar hairs slightly shorter than width. Prefrons with 2 stout and 7 to 11 moderately developed setae. Clypeus bare. Palpus 3-segmented (fig. 20, *c*); segment 1 slightly swollen distal 1/2 with 2 dorsal setae and numerous basiconic sensillae; segment 2 about 0.6 × length of 1st, with 6 setae; segment 3 subequal in length to 1st but about 1/2 as wide, with numerous setae.

*Flagellomere 4 was distorted; therefore, flagellomere 3 is described.

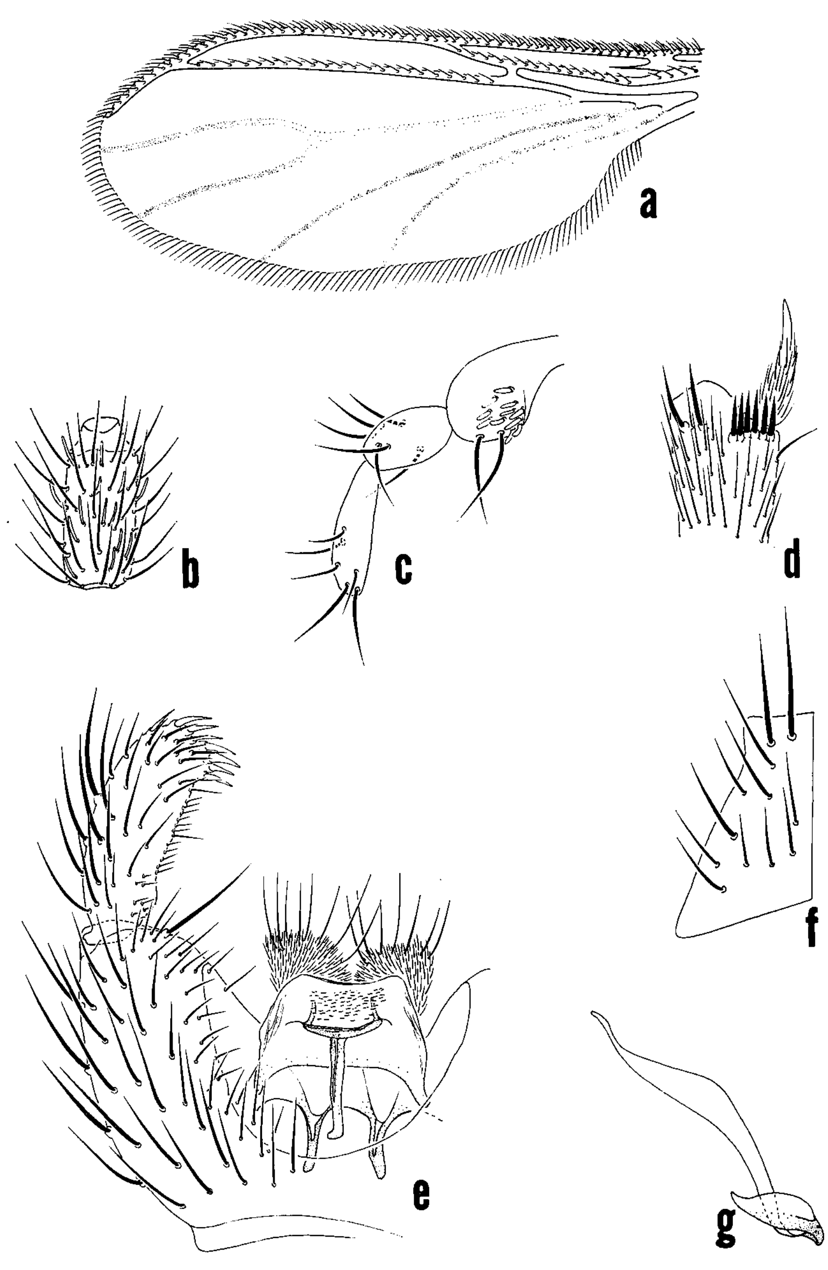


FIGURE 20. *Bradysia radicum.* Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX. Female: **g,** vaginal furca, lateral view.

Thorax: Acrostichals poorly developed; dorsocentrals moderately to well developed—longest subequal to longest supraalars. Scutellum with posterior row of 4 to 6 strong setae. Posterior pronotum bare; anterior pronotum with 1 row of 4 setae and proepisternum with 7 setae subequal to *apn* setae. Proepimeron well developed; posterior epimeron of mesothorax normal, about 2.3 × longer than wide. Metanotal apodeme long and narrow.

Legs: Fore-leg ratio 23:24:13:6 (range of tibial length 22–26); hind-leg ratio 27:38:18:6 (range of tibial length 35–41). Setae of fore tibia largely subequal, none distinctly enlarged; scattered setae of mid tibia somewhat differentiated from general tibial vestiture; hind tibia with very strong posterodorsal setae along distal 0.6, about 1.5 × as long as tibial diameter. Fore tibial comb (fig. 20, *d*) 1-rowed, with 6 or 7 setae separate from tibial vestiture by distinct bare area. Apex of hind tibia with 7 differentiated setae; spurs distinctly longer than diameter of tibial apex. Tarsal claws simple, slightly swollen medially.

Wing: (fig. 20, *a*); length 1.3–1.4 mm, width 0.5 mm. R-M index 2.2–3.3, C-M index 0.6–0.7. Costa, R_1, and R_5 with macrotrichia, other veins bare; r-m 0.5–1.7 × length of bM; Cu 0.3–0.8 × length of bM; M, M_1, and M_2 evanescent; anal vein distinct basally. Haltere knob with 1 row of dorsal setae.

Abdomen: Tergal setae strong, subequal to larger supraalar setae; sternal setae a little shorter. Sternum VIII with 2 medial posterior setae. Terminalia as in fig. 20, *e*; tergum IX as in fig. 20, *f* with 24 scattered setae, lateral and posterior setae longer; tergum X bilobed. Basimere ventrally narrowly joined without median protuberance of differentiated setal groups. Mesoapical setae strong, slightly more than 0.5 × length of distimere. Dorsal apodeme slender extending about 1/2 way into genital cavity. Genital rod long, slender and broadly forked. Tegmen as in fig. 20, *e*. Distimere as in fig. 20, *e* with apical group of strongly differentiated spines, apical spine slightly separated from apical mesal group of 4 spines.

Female. Similar to ♂. Flagellomeres subequal in length. Wing length 1.7–1.9 mm. Cercus normal. Vaginal furca (fig. 20, *g*) stem greatly swollen medially and heavily chitinized anteriorly, arms joining stem near anterior 1/3.

MATERIAL EXAMINED: 2,413 specimens; 376 ♂♂ and 553 ♀♀ on slides, 98 ♂♂ and 1,387 ♀♀ in alcohol.

DISTRIBUTION: India, Samoa, Marquesas, Fiji, Hawaiian Is., Micronesia; (?) England.

S. MARIANA IS. GUAM: 2 ♀♀, Nimitz Beach, Aug. 1952, Krauss; 2 ♀♀, Nimitz Hill, May 1956, Clagg; 4 ♀♀, Oca Pt., May 1945, Bohart and Gressitt; ♂, 10 ♀♀, same locality and collectors, Jun. 1945; 6 ♂♂ and 10 ♀♀, same locality and collectors, Jul. 1945; ♀, Oca Pt., Jun. 1945, Dybas; 31 ♀♀, Ritidian Pt., Aug. 1945, Bohart and Gressitt. SAIPAN: As Mahetog, Dybas, ♂, 5 ♀♀, Nov. 1944; ♂, 54 ♀♀, Jan. 1945, ♀, Feb. 1945, 2 ♀♀, Apr. 1945; 2 ♀♀, same locality, Nov. 1944, Edgar; ♀, same locality, May 1965, collector unknown; ♂, 7 ♀♀, Chalan Kanoa, #15149, Maehler; 2 ♀♀, Tagpochau Mt., ♂, N.N.E. of summit, Nov. 1944, Edgar.

PALAU. ANGAUR: 4 ♀♀, Feb. 1948, Dybas. BABELTHUAP: ♀, Imeliik, Netkeng, Jun. 1957, Sabrosky; 11 ♂♂, 42 ♀♀ Melekeiok, May 1957, Sabrosky; 16 ♂♂, 54 ♀♀, Ngaremlengui (Ngeremlengui), Jun. 1957, light trap, Sabrosky; 2 ♂♂, 71 ♀♀, Ngerehelong Pen., May 1957, at light, Sabrosky; 18 ♂♂, 144 ♀♀, Ngiwal, May 1957, at light, Sabrosky; ♂, ♀, Ulimang, Dec. 1947, Dybas.

KOROR: 14 ♂♂, 57 ♀♀, Aug. 1956, McDaniel; 19 ♂♂, 34 ♀♀, Jul. 1956, McDaniel; 171 ♂♂, 713 ♀♀, Apr. 1957, attracted to formalin pans of pickled fish, Sabrosky; 3 ♂♂, 31 ♀♀, May 1957, at light, Sabrosky; ♂, 6 ♀♀, May 1953, Beardsley; ♀, May 1953, Beardsley; ♀, Nov. 1947, Dybas; ♀, Jan. 1948, Dybas; 4 ♀♀, Jun. 1938, Murakami; 28 ♀♀, N.E. Koror, Apr. 1957, base of limestone ridge, Sabrosky; 3 ♂♂, 16 ♀♀, S.W. Koror, Dec. 1952, Gressitt; 2 ♂♂, 2 ♀♀, Ngarbaged, May 1938, Murakami; 2 ♂♂, 7 ♀♀, Ngerabad (Ngarbaged), Apr. 1957, Sabrosky. NGAIANGL: 5 ♂♂, 4 ♀♀, May 1957, Sabrosky; 14 ♂♂, Ngaiangl I., Dec. 1952, Gressitt. NGARMALK (N.W. Auluptagel): 9 ♀♀, Dec. 1952, Gressitt. PELELIU: 44 ♂♂, 225 ♀♀, May 1957, at light, Sabrosky; ♀, N. end Peleliu, May 1957, at light, Sabrosky.

YAP. RUMUNG: 26 ♂♂, 75 ♀♀, Jun. 1957, light trap, Sabrosky; 4 ♀♀, Aug. 1950, Goss. 2 ♂♂, 20 ♀♀, Dugor, Aug. 1950, Goss; 8 ♂♂, 20 ♀♀, Jan. 1957, Sabrosky; 66 ♂♂, 93 ♀♀, Weloy, Dugor, Jun. 1957, at light, Sabrosky; 3 ♂♂, 54 ♀♀, Gachapar, Gagil Distr., Jun. 1957, Sabrosky; 7 ♀♀, Giliman, Jun. 1957, Sabrosky; 4 ♀♀, Kanif, Jul. 1950, Goss; Yap Hill behind Yaptown: 5 ♂♂, 10 ♀♀, Nov. 1952; ♂, ♀, Dec. 1952, Gressitt; 18 ♂♂, 35 ♀♀, Kolonia, Jun. 1957, Sabrosky; 3 ♀♀, N. Yap I., Berlese funnel, Jul. 1950, Goss; ♀, S. Yap I., Berlese funnel collection, Jul. 1950, Goss; ♂, same locality, Aug. 1950, Goss.

TRUK. TON: 2 ♀♀, Unibot Mt., Dec. 1952, Gressitt; ♀, same locality and collector, Jan. 1953. WENA (MOEN): ♀, Chukumong Mt. (Teroken Mt.), Dec. 1952, Gressitt; ♀, same, Feb. 1953; 2 ♀♀, Civil Administration Area, Feb. 1949, Potts.

PONAPE. 3 ♂♂, 5 ♀♀, Agriculture Experiment Station, Jan. 1953, Gressitt.

KUSAIE. ♀, Malem, Apr. 1953, at light, Clarke; Mutunlik: 2 ♀♀, Jan. 1953, ♀, Feb. 1953, ♀, Mar. 1953, all Clarke; 3 ♀♀, Jan. 1953, Gressitt; ♀, Pukusrik, Apr. 1953, beating, Clarke.

MARSHALL IS. KWAJALEIN: 2 ♀♀, Carlson I., Oct.-Nov. 1964, Perkins. JALUIT: Jabwar I. (Jabor I.), ♂, Apr. 1958, ♀, May 1958, Gressitt.

GILBERT IS. BUTARITARI: ♀, Butaritari village, Nov. 1964, Perkins.

B. radicum apparently is widely distributed throughout the Pacific and Oriental areas. This species was described by Brunetti (1912) from India and recorded from Samoa, Marqueses, and Fiji by Edwards (1928). Edwards also recorded it from England. The status of this and many other species described by earlier authors will remain questionable until this genus can be studied on a world-wide basis. Some of the species in *Bradysia* undoubtedly are cosmopolitan in distribution and probably have been described under several names. In Tuomikoski (1960), *B. radicum* fits in his *Bradysia praecox* group, keying out near *B. nitidicollis* (Meigen). In Petty (1918), *radicum* keys out near *B. impatiens* (Johannsen).

20. **Bradysia snyderi** Steffan, n. sp. (fig. 21, *a-g*)

MALE. *Head:* Interfacetal hairs abundant, extending well beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide at junction. Median ocellar bristles strong. Antenna: scape with several strong median setae, pedicel with weaker scattered setae; flagellomere 4 (fig. 21, *b*) about 2.0 × longer than wide with short neck (0.20); flagellar hairs only slightly shorter than diameter of segments. Prefrons with 2 long ventral setae and 8 weaker median setae. Clypeus with 2 dorsal setae. Palpus 3-segmented (fig. 21, *c*), segment 1 club-shaped with 1 seta and many basiconic sensillae set in a distinct sensory pit; segment 2 with 4 or 5 setae, slightly shorter than segment 1; segment 3 with 7 setae and subequal in length to segment 1.

Thorax: Acrostichals moderately developed to anterior 3/4, dorsocentrals well developed about 2 × as long. Supraalars strong. Posterior pronotum bare; anterior pronotum with 3 or 4 posterior setae, proepisternum with 5 scattered setae usually subequal to *apn* setae. Proepimeron sharply triangular distally; posterior epimeron of mesothorax slightly longer than wide. Metanotal apodeme long and narrow.

Legs: Fore-leg ratio 19:21:12:5, hind-leg ratio 25:36:17:6. Setae of fore tibia subequal, fore tibial comb (fig. 21, *d*) 1-rowed with 8 setae distinctly separated from tibial vestiture by bare area. Mid tibia with subequal setae. Hind tibia with differentiated posterodorsal setae along distal 1/2, much thicker than but only slightly longer than general tibial setae, apex with 11 differentiated setae, spurs distinctly longer than diameter of tibial apex. Tarsal claws simple.

Wing: (fig. 21, *a*); length 1.5 mm, width 0.5 mm. R-M index 2.1, C-M index 0.8; r-m 0.4 × length of bM and Cu about 0.5 × length of bM. Costa, R_1 and R_5 with macrotrichia; M evanescent; anal vein evanescent. Haltere with 1 row of dorsal setae.

Abdomen: Tergal setae well developed, sternal setae generally shorter. Sternum with 1 or 2 setae on posterior corners. Terminalia as in fig. 21, *e*; tergum as in fig. 21, *f*, very narrow anteroposteriorly. Basimeres ventrally narrowly connected with no distinctive setal groups; mesoapical setae subequal to longer than ventral setae. Dorsal apodeme slightly inflated posterior 1/3 extending about 1/2 way into abdominal cavity. Genital rod indistinct in holotype. Tegmen indistinct. Distimere ovoid with 3 or 4 stout spines mesoapically.

FEMALE. Similar to ♂. Flagellomere 4 about 0.7 × length that of ♂. Cercus normal. Vaginal furca (fig. 21, *g*), stem slightly flattened dorsoventrally, arms attached from middle to preposterior quarter.

Holotype, ♂ (US 70565), Okimura, Haha Jima, Bonin Is., Apr. 26-May (labelled Jun., in error) 9, 1958, Snyder; allotype (BISHOP 8226), ♀, same data.

MATERIAL EXAMINED: ♂, ♀ on slides.

DISTRIBUTION: Bonin Is. (Haha Jima)

21. **Bradysia tritici** (Coquillett) (fig. 22, *a-h*)

Sciara tritici Coquillett, 1895, Insect Life **7**(5): 408.

Sciara ocellaris Osten-Sacken, *sensu* Comstock, 1882, IN Riley, Report Comm. Agric. **1881** and **1882:** 203 (error in association of undescribed adult sciarid with a cecidomyiid larva). —Steffan, 1965, Pac. Ins. **7**(2): 290 (synonymy).

Sciara ocellaris Comstock, Johannsen, 1912, Bull. Maine Agric. Exp. Sta., **200:** 38. —Steffan, 1965, Pac. Ins. **7**(2): 290 (synonymy, wrong association of specific name and author).

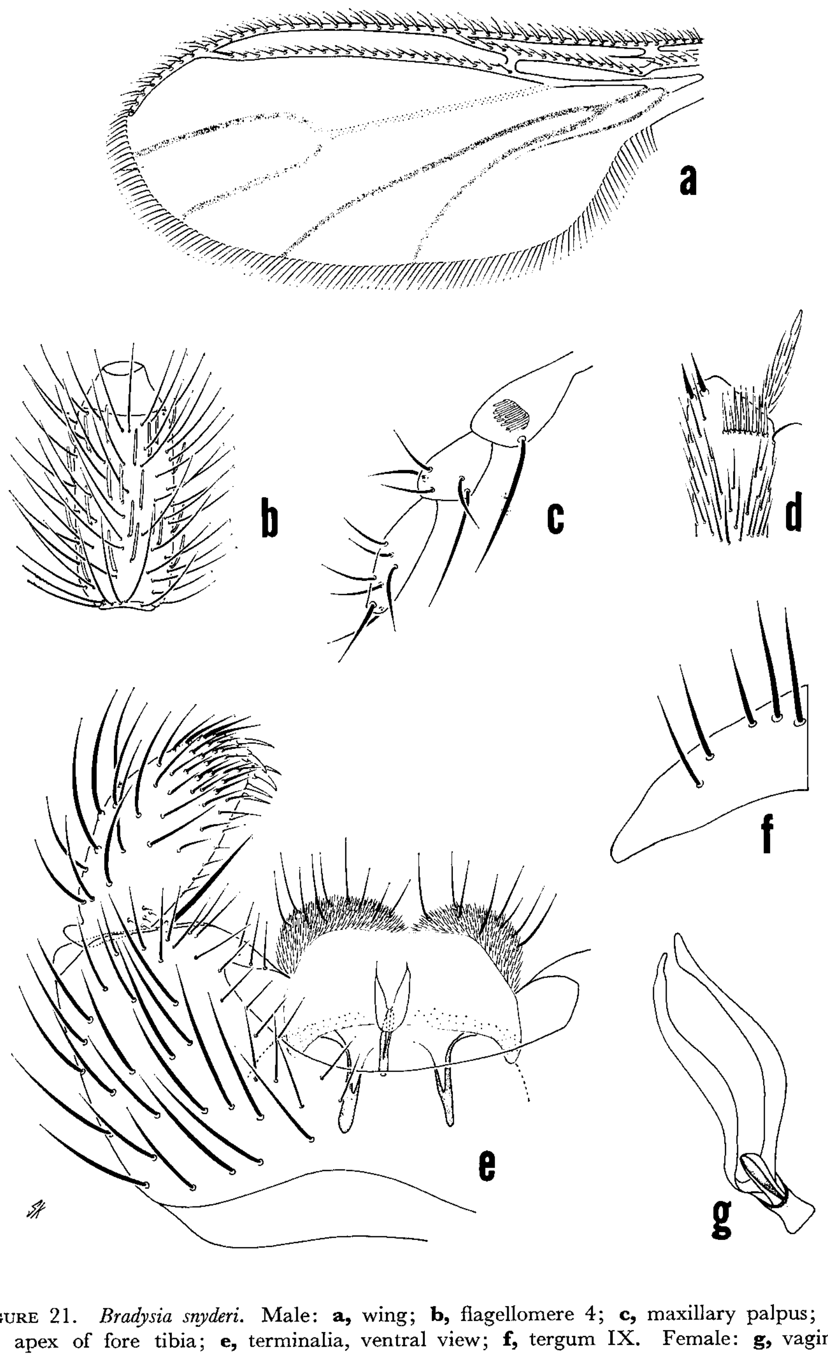


FIGURE 21. *Bradysia snyderi*. Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** tergum IX. Female: **g,** vaginal furca, dorsal view.

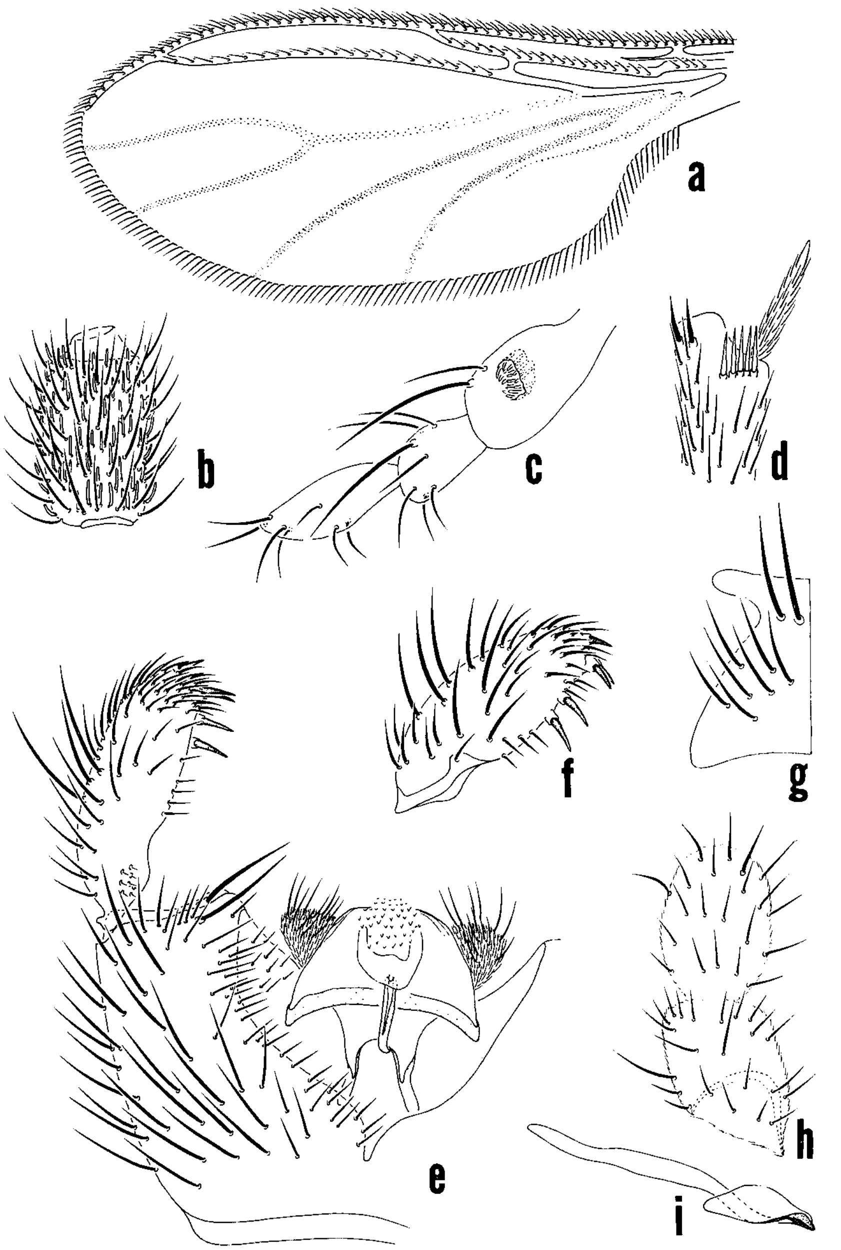


FIGURE 22. *Bradysia tritici.* Male: **a,** wing; **b,** flagellomere 4; **c,** maxillary palpus; **d,** apex of fore tibia; **e,** terminalia, ventral view; **f,** distimere, dorsal view; **g,** tergum IX. Female: **h,** cercus; **i,** vaginal furca, lateral view.

Sciara garretti Shaw, 1952, Proc. Haw. Ent. Soc. **14:** 494. —Hardy, 1960, IN Zimmerman, Insects of Hawaii **10:** 221. —Steffan, 1965, Pac. Ins. **7**(2): 290 (synonymy).

Sciara johannseni Shaw (*nec johannseni* Enderlein, 1912), 1952, Proc. Haw. Ent. Soc. **14:** 493. NEW SYNONYMY.

Sciara lafooni Shaw, 1952, Proc. Haw. Ent. Soc. **14:** 494. NEW SYNONYMY.

MALE. *Head:* Interfacetal hairs abundant, extending slighty beyond curvature of facets; eye bridge broadly joined, 3 facets wide throughout. Median ocellar bristle well developed. Setae of antennal scape distinctly larger than those of pedicel; flagellomere 4 (fig. 22, *b*) 1.6–2.0 × longer than wide with short neck (about 0.20 × length), flagellar hairs about 1/2 diameter of segments. Prefrons with 2 long and stout and 12–18 moderately developed setae. Clypeus with 1 seta. Palpus 3-segmented (fig. 22, *c*); segment 1 swollen distal 2/3 with distinct dorsal sensory pit and 2 or 3 dorsal setae; segment 2 with 5 to 7 distal setae; segment 3 subequal in length to 1 but narrower.

Thorax: Acrostichals moderately developed, dorsocentrals distinctly longer. Scutellum with posterior row of long and stout setae, subequal to largest supraalars. Posterior pronotum bare; anterior pronotum with 1 stout ventroposterior and 3 weaker median setae. Proepisternum with 5 to 7 weaker, scattered setae. Proepimeron well developed, sharply triangular; posterior epimeron of mesothorax normal, about 1.25 × longer than wide. Metanotal apodeme moderately long and broad. Katepisternum with dorsal light stripe.

Legs: Fore-leg ratio: 21:23:13:6 (range of tibial length 21–26); hind-leg ratio: 29:36: 15:6 (range of tibial length 31–36). Setae of fore and mid tibiae subequal; hind tibia with strong posterodorsal setae along distal 1/2, about equal to diameter of tibia. Fore tibial comb (fig. 22, *d*) 1-rowed with 4 to 6 subequal setae distinctly separated from tibial vestiture by bare area. Apex of hind tibia with 8 differentiated setae; spurs distinctly longer than diameter of tibial index.

Wing: (fig. 22, *a*); length 1.4–1.6 mm, width 0.5–0.6 mm. R-M index 2.0–2.5, C-M index 0.6–0.7. Costa, R_1, R_5, and distal portion of r-m with macrotrichia, other veins bare; r-m 0.5–1.0 × length of bM; Cu 0.5–0.7 × length of bM; M and anal vein evanescent. Haltere with 1 row of dorsal setae.

Abdomen: Tergal setae slightly shorter than scutellars, sternal setae subequal to tergal setae. Sternum VIII with posterior row of setae. Terminalia as in fig. 22, *e*; tergum IX as in fig. 22, *g*; tergum X bilobed. Basimere ventrally broadly joined without median protuberance or differentiated setal groups. Mesoapical seta strong, about 2/3 length of distimere. Dorsal apodeme short and narrow extending about 1/2 way into genital cavity. Genital rod moderately long, slender and broadly forked. Tegmen as in fig. 22, *e*. Distimere (fig. 22, *f*) about 0.9 × length of basimere, about 3 × longer than wide with dense apical setae and 1 apical, 2 mesoapical, and 2 preapical mesal spines.

FEMALE. Similar to ♂. Flagellomere 4 about 0.6–0.7 × length that of ♂. Wing length: 1.4–1.6 mm. Cercus as in fig. 22, *h*. Vaginal furca (fig. 22, *i*), stem greatly swollen medially, flattened laterally and heavily sclerotized anteriorly; arms joining stem near middle.

MATERIAL EXAMINED: 6 ♂♂, 21 ♀♀ on slides.

DISTRIBUTION: North America, South America, Hawaii, Micronesia, Europe.

S. MARIANA IS. GUAM: 2 ♀♀, Oca, Pt., Jun., Jul. 1945, Bohart and Gressitt; ♀, Nimitz Hill, May 1956, Clagg.

PONAPE. ♀, Kolonia (Colonia), Feb. 1948, Dybas.

KUSAIE. ♀, Matanluk (Mutunlik), Feb. 1963, Clarke.

MARSHALL IS. ENIWETOK: 4 ♂♂, 4 ♀♀, Jobtan (Japtan) I., Aug. 1956, Tuthill.

The nomenclature of this species is very confused. It is cosmopolitan in distribution and has been described under several names. It is apparently associated closely with man and greenhouse operations and probably was accidentally introduced into many areas. The identity of this species is further confused in that a very closely related and often indistinguishable species, *Bradysia reynoldsi*, was discovered and described by Metz (1938). This "*tritici*" complex needs to be thoroughly studied genetically and by more sophisticated taxonomic methods before this problem can be solved.

Tuomikoski (1960) treated this species as *Bradysia ocellaris* (Comstock) after Johannsen (1912). *B. ocellaris* is unavailable since Osten-Sacken originally used *Cecidomyia ocellaris* to describe a cecid larva. Comstock (1882) mistakenly associated an undescribed adult sciarid with the cecid larva. Subsequent authors perpetuated the error by crediting this name (as *Sciara ocellaris*) to Comstock. *Sciara tritici* Coquillett (1895), being the oldest available name for this species, is therefore considered the valid name. Tuomikoski included *Sciara pectoralis* Staeger, *sensu* Edwards 1925, *Lycoria* (*Neosciara*) *tritici* (Coquillett), Lengersdorf 1930, *Bradysia* (*Chaetosciara*) *rubicundula* Frey and, provisionally *Sciara tritici* Coquillett as synonyms of *ocellaris* "Comstock." Until the European species of this complex are thoroughly examined and compared with those of other areas, I hesitate to include his synonymies.

Genus **Lobosciara** Steffan, new genus

Type of genus: *Bradysia spinipennis* Sasakawa

MALE. *Head:* Interfacetal hairs long and abundant; eye bridge broadly joined, 3 facets wide; flagellomere 4 about 1.5–2.0 × longer than wide, flagellar hairs shorter than diameter of flagellomeres; flagellar necks short but distinct. Palpus 3-segmented, segment 1 with 1 dorsolateral seta and numerous hyaline basiconic sensillae. Clypeus with 5 to 7 median setae. Labellum well developed.

Thorax: Mesonotum with acrostichals absent on posterior 1/2; dorsocentrals moderately developed. Posterior pronotum bare. Posterior epimeron of mesothorax wide, slightly wider than long.

Legs: Tibial spurs 1:2:2; basitarsus of fore leg about 0.8 – 0.9 × length of fore femur. Fore tibia without enlarged medial setae and with unevenly 1-rowed tibial comb separated from tibial vestiture by distinct bare area. Hind tibia with several enlarged apical spines, spurs distinctly longer than diameter of tibial apex. Tarsal claws toothed.

Wing: R-M index 1.2–1.4, C-M index 0.7–0.8. Costa, R-, R-, and apex of r-m with macrotrichia; posterior veins bare; r-m slightly longer than bM; Cu subequal or slightly shorter than bM; medial fork symmetrical. Haltere with 1 to incompletely double row of dorsal setae.

Abdomen: Abdominal setae strong; sternum VIII with 1 row of posterior setae. Tergum X bilobed and each lobe bilobed. Basimeres narrowly joined basally with distinct setigerous mesal lobes. Genital rod elongate, whip-like. Distimere elongate with strong mesal setae.

FEMALE. Similar to ♂. Vaginal furca flattened dorsoventrally and swollen anteriorly, arms joining stem posteriorly.

This genus differs from other sciarid genera in the peculiar structure of the male terminalia—i.e., the lobed ventral surface of the basimere, the shape of tergum X, and the structure of the genital rod. In other genera, the genital rod is generally forked posteriorly or else is very short, whereas in *spinipennis*, it is elongate and whip-like, without a posterior fork. Also, the bilobed condition of each of the lobes of tergum X is unique, as is the bilobed condition of the ventral, mesal surface of the basimere. In the female, the expanded anterior portion of the stem of the vaginal furca is unique.

Lobosciara apparently is closely related to *Bradysia*, from which it differs in the characters noted above.

22. **Lobosciara spinipennis** (Sasakawa), **NEW COMBINATION** (fig. 23, *a-j*)

Bradysia spinipennis Sasakawa 1962, Nature & Life in S.E. Asia **2:** 130.

MALE. *Head:* Interfacetal hairs abundant and long, extending at least 2 × height of facet beyond outer curvature of facets; eye bridge broadly joined, 3 facets wide at junction, becoming 2 facets wide laterally, upper facetal rows near junction irregular, 2 median ocellar bristles well developed. Antenna: scape with 1 to irregularly double median transverse row of strong setae; pedicel with irregular patch of weaker setae on distal 1/2; flagellomere 4 (fig. 23, *b*) about 1.5–2.0 × longer than wide with short neck (about 0.1 × length); flagellar hairs shorter than width of flagellomeres. Prefrons with 8 to 16 well developed setae along ventral 1/2. Clypeus with 5 to 7 median setae on dorsal half. Palpus 3-segmented (fig. 23, *d*), segment 1 slightly swollen medially with 1–2 dorsolateral setae and numerous dorsal basiconic sensillae; segment 2 about 0.70 × length of first, swollen distally with 12 setae; segment 3 slender, subequal in length to 1st, with 9 setae.

Thorax: Mesonotum with 2 short rows of moderately developed acrostichals anterior 1/2; dorsocentrals moderately developed, about 1/2 to 2/3 as long as longest supraalars. Scutellum with 4 long median and 6 weaker lateral bristles. Posterior pronotum bare; anterior pronotum with 4 to 6 strong setae and proepisternum with 7 to 13 scattered setae subequal to anterior pronotals. Proepimeron well developed, blunt; posterior epimeron of mesothorax wide, slightly wider than long. Metanotal apodeme rather short and wide.

Legs: Fore-leg ratio 35:52:31:12 (range of femoral length 34–38); hind-leg ratio 51:75:36:10 (range of femoral length 49–55). Setae of fore tibia and mid tibia largely undifferentiated; hind tibia with strong posterodorsal setae along distal 0.6, slightly shorter than tibial diameter and with 6 to 8 moderately differentiated ventral setae along distal 1/3 or more. Mid and hind coxae darkened distally. Fore tibial comb (fig. 23, *e*) unevenly 1-rowed, with 7 to 9 enlarged setae separated from tibial vestiture by distinct bare area. Apex of hind tibia with 7 strong apical and 3 weaker preapical enlarged setae; spurs distinctly longer than diameter of tibial apex. Tarsal claws with 3 or 4 distinct setaceous teeth.

Wing: (fig. 23, *a*); length 2.6–2.8, width 0.9–1.0 mm. R-M index 1.2–1.4, C-M index 0.7–0.8. Costa, R_1, R_5, and apex of r-m with macrotrichia; r-m 1.2–1.6 × longer than bM; Cu

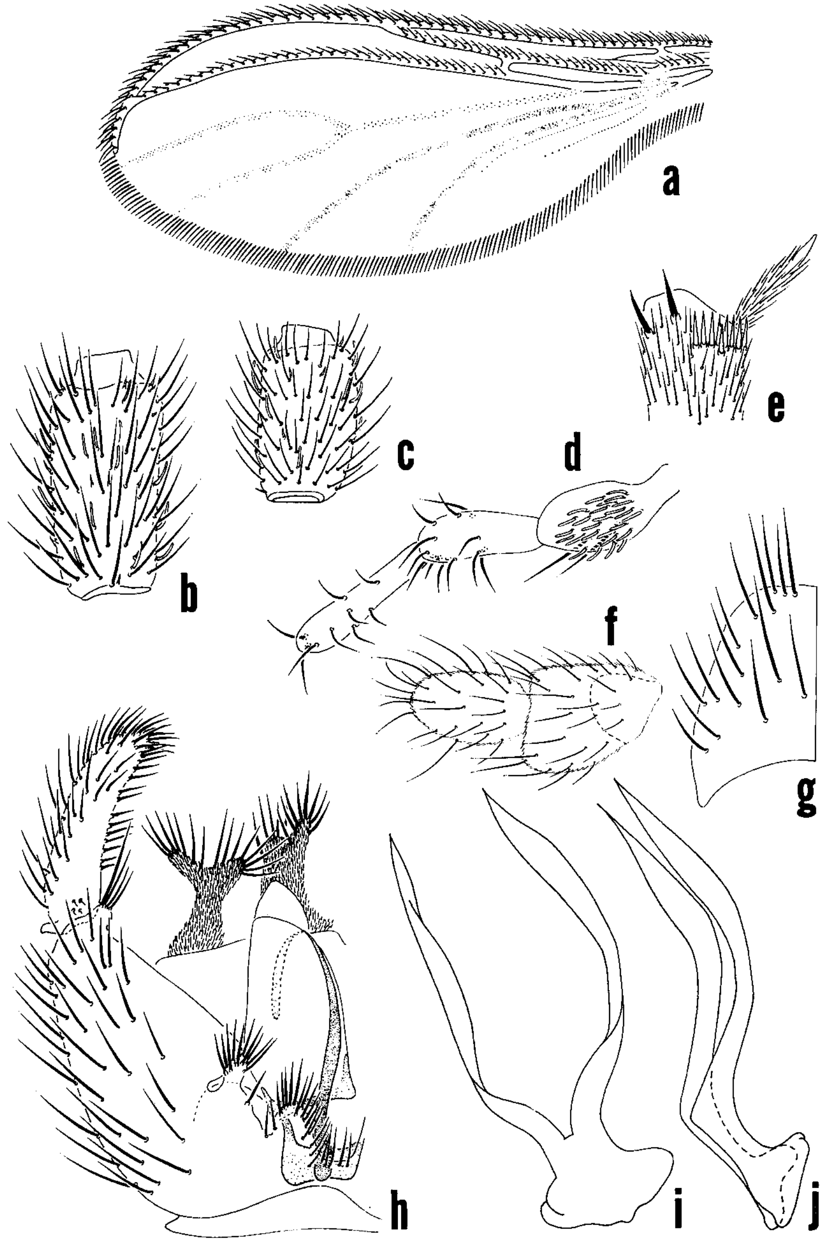


FIGURE 23. *Lobosciara spinipennis.* **a,** wing, male; **b,** flagellomere 4, male; **c,** flagellomere 4, female; **d,** maxillary palpus, male; **e,** apex of fore tibia, male; **f,** cercus, female; **g,** tergum IX, male; **h,** terminalia, ventral view, male; **i,** vaginal furca, ventral view, **j.** vaginal furca, lateral view, female.

0.9–1.0 × length of bM; fork of media evanescent basally; anal vein distinct. Haltere with 1 to incompletely double row of dorsal setae.

Abdomen: Tergal setae strong, subequal to larger supraalars, sternal setae slightly shorter. Sternum VIII with 1 row of posterior setae. Terminalia as in fig. 23, *h*; tergum IX as in fig. 23, *g*; tergum X bilobed, each lobe also bilobed. Basimeres ventrally narrowly joined, each with 2 proximal lobes, each densely setigerous distally, distal lobe more pronounced ventromesally with distinct tubercle near distal angle bearing 3 long setae. Distimere enlongated, slightly arcuate, about 0.6 × length of basimere, with numerous strong setae mesoapically and several strong setae medially, proximal seta slightly longer. Dorsal apodeme broad and blunt, not furcate. Genital rod long and slender, usually hooked apically. Tegmen as fig. 23 *h*.

FEMALE. Similar to ♂. Flagellomere 4 (fig. 23, *c*) length 0.6 – 0.7 × that of ♂. Mid and hind coxae darker. Wing length 2.6–3.3 mm. Cercus as in fig. 23, *f*. Vaginal furca (fig. 23, *i*, *j*), stem flattened dorsoventrally and swollen anteriorly, arms joining stem posteriorly.

MATERIAL EXAMINED: 85 ♂♂, 204 ♀♀ on slides; 13 ♂♂, 53 ♀♀ in alcohol.

DISTRIBUTION: Thailand, Micronesia (new records).

N. MARIANA IS. ANATAHAN: ♂, Aug. 1951, Bohart.

S. MARIANA IS. GUAM: ♂, 3 ♀♀, #1386, Fullaway; ♂, Oct. 1947, ♀, Nov. 1947, Dybas; 3 ♀♀, Jul. 1945, 2 ♀♀, Aug. 1945, Chaffee; ♂, 2 ♀♀, Apr. 1946, Krauss; 5 ♀♀, Agana Airport, Aug. 1945, Dybas; ♀, Fadian (? Fadang), May 1945, beating vegetation, Lot #2102, Dybas; 2 ♂♂, Nimitz Hill, May 1956, Clagg; Oca Pt., light trap, Bohart and Gressitt, ♂, May 1945, 4 ♂♂, 2 ♀♀, Jun. 1945 and 5 ♂♂, 9 ♀♀, Jul. 1945; 2 ♂♂, Pago, Oct. 1945, garbage dump, Bohart and Gressitt; ♂, ♀, Ritidian Pt., Aug. 1945, light trap, Gressitt; Talofofo, Krauss, 4 ♀♀, Apr. 1946, 2 ♀♀, Aug. 1952. SAIPAN: ♂, 3 ♀♀, summer 1945, Hagen; ♂, Jan. 1945, Lot #591, Dybas; As Mahetog, Dybas, ♂, Jan. 1945, Lot #447, at light, ♂, 3 ♀♀, Apr. 1945, sifting decaying banana leaves and stems; 2 ♀♀, May 1945; 3 ♂♂, 6 ♀♀, Chalan Kanoa, #15149, light trap, Maehler; 9 ♀♀, Tagpochau Mt. (Tapotchau Mt.), Jul. 1949, Mead and Kondo; ♀, Tagpochau Mt. (Togpochau Mt.), 381 m, Feb. 1945, Lot #736, Dybas. TINIAN: ♀, Marpo Mt., Oct. 1945, Dybas.

PALAU. ANGAUR: ♂, Feb. 1948, Dybas. ULEBSEHEL (Auluptagel): ♀, Sep. 1952, Krauss; ♂, 2 ♀♀, N.W. Auluptagel, Dec. 1962, light trap, Gressitt. BABELTHUAP: ♀, Airai (colony), Ngerimal R., May 1957, Sabrosky; ♀, Melekeiok, May 1957, Sabrosky; ♀, Ulimang, Dec. 1947, dead banana leaves, Dybas. KOROR: ♂, Jul. 1956, McDaniel; 2 ♀♀, limestone ridge S. of inlet, Jan. 1948, Dybas; ♂, ♀, Dec. 1947, collector unknown; ♂, Apr. 1953, Beardsley, ♂, 9 ♀♀, Apr. 1957, limestone ridge, 30 m, Sabrosky; ♂, S.W. Koror, Dec. 1952, light trap, Gressitt; ♀, Ngerabad, Apr. 1957, at light, Sabrosky. MALAKAL: ♂, May 1957, Sabrosky. PELELIU: ♂, Aug. 1945, at light, Dybas; ♂, Amiangal Mt., Dec. 1952, light trap, Gressitt.

TRUK. Wena (Moen): Chukumong Mt. (Teroken Mt.), ♂, Feb. 1953, 150 m., Gressitt; ♂, 2 ♀♀, Dec. 1952, light trap, 80 m, Gressitt; Civil Administration Area, 18 ♂, 69 ♀♀, Feb. 1949, and 3 ♂♂, 56 ♀♀, Mar. 1949, Potts; 2 ♀♀, southern valley of Tonaachau Mt., Feb. 1949, Potts; Ton (Tol): ♂, Netuta, Apr. 1949, at light, Potts; Unibot Mt., 3 ♂♂, ♀, Dec. 1952, light trap, 200 m, Gressitt; ♂, Dec. 1952, light trap, 390 m, Gressitt; ♂, Jan. 1953, lower native forest, 25–50 m, Gressitt; ♂, Jan. 1953, native forest, 390 m, Gressitt.

PONAPE. Kolonia (Colonia): 2 ♀♀, Jan. 1953, Clarke; 3 ♀♀, Feb. 1948, Potts; Agriculture Experiment Station, Kolonia, 5 ♂♂, 3 ♀♀, Jan. 1953, light trap, 16 m, Gressitt; 4 ♀♀, Jan. 1953, cacao grove, light trap, Gressitt; 5 ♂♂, Nanmatol (Nanmetal), Jan. 1953, flying around leaves of dead vine, Clarke; Nanpohnmal (Nanponmal), 2 ♂♂, Jan. 1953, Berlese funnel, Gressitt; ♂, Jan. 1953, light trap, Gressitt; 2 ♀♀, Nihpit (Nipit)-Kapiroi-Reito, Jul. 1939, Esaki; ♂, Palikir (Paliker), Jan. 1938, Esaki; Temwetemwensekir Mt. (Tamatamansakir), ♂, Mar. 1948, summit, 479 m, Dybas; 2 ♂♂, Jan. 1953, 100 m, Gressitt; 2 ♂♂, Jan. 1953, 180 m, Gressitt.

KUSAIE. Matanluk (Matunlik), 22 m, 2 ♂♂, 5 ♀♀, Jan. 1953, Clarke; 3 ♂♂, 3 ♀♀, Feb. 1953, Clarke; 2 ♂♂, 3 ♀♀, Mar. 1953, Clarke; 2 ♂♂, 10 ♀♀, Jan. 1953, light trap, Gressitt; ♀, Jan. 1953, Gressitt; ♀, Matante Mt., Apr. 1953, 380 m, Clarke.

MARSHALL IS. Arno: Ine I., 2 ♀♀, Jun. 1950, LaRivers; ♀, Aug. 1950, LaRivers; ♂, Jul. 1950, LaRivers. Jaluit: Jabwar I. (Jabor), ♂, Apr. 1958, Gressitt; 5 ♀♀, May 1958, Gressitt; 2 ♂♂, 3 ♀♀, Jaluit I., Nov. 1964, Perkins; ♀, Jifu I., Apr. 1958, Gressitt.

Lobosciara spinipennis was described from Thailand (Sasakawa, 1962) as a *Bradysia* species. The widespread distribution of this species in Micronesia indicates that it probably is widespread in the Oriental regions also. It is easily distinguished from all other sciarids by the unusual features of the male terminalia.

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